



Town of Arlington Board of Selectmen

Meeting Agenda

March 30, 2015

7:15 PM

Selectmen's Chambers, 2nd Floor, Town Hall

1. Organizational Meeting for the Purpose of Electing a Chairman and a Vice Chairman
Marie A. Krepelka, Board Administrator

FOR APPROVAL

2. Farmers' Market 2015
Patsy Kraemer, Market Manager

CONSENT AGENDA

3. Appointments of New Election Workers: (1) Catherine Ann Caruso, 17 Mill Street, D, Pct. 11; (2) Roseann Casazza, 17 Amherst Street, D, Pct. 3; (3) Kathryn Gillis, 170 Pleasant Street, U, Pct. 14; (4) Rita Head, 37 Amherst Street, U, Pct. 14; (5) Julianne Kelly, 78 Summer Street, D, Pct. 6; (6) Mary Stretton, 65 Kensington Park, D, Pct. 10
4. Request: One Day All Alcohol License, 5/16/15 @ Fidelity House, 25 Medford Street for the Annual Fundraiser
Ed Woods, Executive Director
Frank Tessitore
5. Approval: 3rd Annual Bladder Cancer Awareness Walk, Saturday, 5/9/15
Linda and Tracy Magram

APPOINTMENTS

6. Disabilities Commission
Beverly Bevilacqua
Susan Savage Tennant
(terms to expire 6/30/2018)

LICENSES & PERMITS

7. Hearing - Report of Underage Sales
 - a) Hope Color, Inc. d/b/a Mr. Sushi
693 Mass. Ave., Daniel Ahn, Manager
 - b) Paramveer Corp. d/b/a Punjab Fine Indian Cuisine,
485-87 Mass. Ave., Jaspal S. Pabla, Manager

c) Y Plus Y, Inc. d/b/a Fusion Taste
303A-305 Broadway, Jason Zhen Ye, Manager

CITIZENS OPEN FORUM - SIGN IN PRIOR TO BEGINNING OF OPEN FORUM

Except in unusual circumstances, any matter presented for consideration of the Board shall neither be acted upon, nor a decision made the night of the presentation in accordance with the policy under which the Open Forum was established. It should be noted that there is a three minute time limit to present a concern or request.

TRAFFIC RULES & ORDERS / OTHER BUSINESS

8. For Approval: Arlington Public Art Youth Initiative Banners on Massachusetts Avenue
Adria Arch, Arlington Public Art
9. Approval: Letter of Support for Updated Plan 2015-Open Space and Recreation Plan
Ann LeRoyer, Chair, Open Space Committee
10. Vote: Approve Submission of Statement of Interest to MSBA - Arlington High School
Adam W. Chapdelaine, Town Manager
11. Discussion: Future BoS Meetings, July - August

WARRANT ARTICLE HEARINGS

Articles for Review

- | | |
|------------|---|
| Article 14 | Disposition of Real Estate/Parcel 13-383 Cliffe Avenue Lexington |
| Article 15 | Home Rule/Board of Assessor Changes (TABLED FROM 2/23/15 MEETING) |
| Article 18 | Endorsement of CDBG Application |
| Article 45 | Resolution/Town Meeting Member Removal Process |

FINAL VOTES & COMMENTS

Articles for Review

- | | |
|------------|---|
| Article 11 | Bylaw Amendment/Establishment of a Community Preservation Committee |
| Article 12 | Revision of Town Committee/Vision 2020 Standing Committee |
| Article 19 | Revolving Funds |

NEW BUSINESS

EXECUTIVE SESSION

Next Meeting of BoS April 13, 2015



Town of Arlington, Massachusetts

Organizational Meeting for the Purpose of Electing a Chairman and a Vice Chairman

Summary:

Marie A. Krepelka, Board Administrator



Town of Arlington, Massachusetts

Farmers' Market 2015

Summary:

Patsy Kraemer, Market Manager

ATTACHMENTS:

Type	Description
 Reference Material	Request from Farmers' Market Manager

*Agenda
3/30/15*



20 March 2015

MEMORANDUM TO THE BOARD OF SELECTMEN

2015 FARMERS' MARKET

The Arlington Farmers' Market respectfully requests permission to hold the seventeenth Arlington Farmers' Market at the Russell Common Parking Lot, Arlington Center, for the 2015 season. The market is held on Wednesday's 2:00 pm to 6:30 pm.. The Market will begin on Wednesday, June 10, 2015, and close on Wednesday, October 28, 2015.

The Arlington Farmers' Market is managed by Patsy Kraemer, assisted and advised by a steering committee, which includes:

Patsy Kraemer, Market Manager
Oakes Plimpton, retired Market Manager
Bob Sargent, prepared foods vendor
Alan Nicewicz, farmer
Betsy Block, consumer
Leon Cantor, Seconds Market
Vicki Rose, Seconds Market
Robin Cohen, Webmaster

The Farmers Market will continue to work with representatives from Menotomy Manor to provide residents with the seconds market. Historically the farmers have been very generous in donating surplus produce for this market.

The market will continue to have liability insurance that is provided from the Massachusetts Farmers' Market Association.

We will have 24 vendors at the market this year, including two wine vendors, eleven farms, one fishmonger, a smoked fish vendor, two bakeries, four prepared food suppliers, and one knife sharpener.

The parking pass program has been implemented for the past two years. It was very successful and quite well-received by the customers. We sold approximately 60 parking passes. We would like to continue that parking pass program this year.

We look forward to continuing this very popular program for the residents of Arlington. The market provides a place for citizens to purchase fresh, locally grown, top quality produce, also to purchase homemade, fresh food products, to learn about the health of fresh produce, and to enjoy the camaraderie of meeting friends and neighbors at this community gathering spot.

We hope you will approve the continuation of this program at the Russell Common Parking Lot.

**Patsy Kraemer
Market Manager
85 Columbia Road, Arlington, Ma. 02474
h: 781-646-4645 c: 781-858-8629**



Town of Arlington, Massachusetts

Appointments of New Election Workers: (1) Catherine Ann Caruso, 17 Mill Street, D, Pct. 11; (2) Roseann Casazza, 17 Amherst Street, D, Pct. 3; (3) Kathryn Gillis, 170 Pleasant Street, U, Pct. 14; (4) Rita Head, 37 Amherst Street, U, Pct. 14; (5) Julianne Kelly, 78 Summer Street, D, Pct. 6; (6) Mary Stretton, 65 Kensington Park, D, Pct. 10

ATTACHMENTS:

Type	Description
 Reference Material	Master Records

ELECTION WORKER'S MASTER RECORD

Date: 3/25/15

Check One: ☒ New Employee
☐ Change to Existing Employee

Vendor # _____
Name: Catherine Ann Caruso
Address: 17 Mill St.
Apt. 418
Zip Code: 02474
Alpha/Last Name: _____

Position Inspector
Democrat ☒
Republican _____
Unenrolled _____
Precinct 11
Phone # 781-643-2410

Position Codes: 10 - Warden
20 - Deputy Warden
30 - Inspector
40 - Deputy Inspector
50 - Clerk

60 - Deputy Clerk
70 - Teller
80 - Substitute
90 - Custodian

ELECTION WORKER'S MASTER RECORD

Date: 3/20/15

Check One: ☒ New Employee
☐ Change to Existing Employee

Vendor # _____ Position _____
Name Roseann Casazza Democrat ☒
Address 17 Amherst St Republican _____
Unenrolled _____
Zip Code 02474 Precinct 3
Alpha/Last Name _____ Phone # call 781-858-0663

Position Codes:

10 Warden	60 Deputy Clerk
20 Deputy Warden	70 Teller
30 Inspector	80 Substitute
40 Deputy Inspector	90 Custodian
50 Clerk	

ELECTION WORKER'S MASTER RECORD

Date: 3-25-14

Check One: ☒ New Employee
☐ Change to Existing Employee

Vendor # _____

Name: KATHRYN Gillis

Address: 170 PLEASANT St.

Zip Code: 02476

Alpha/Last Name: _____

Position Inspector

Democrat _____

Republican _____

Unenrolled ☒

Precinct 14

Phone # 617-775-8025

Position Codes:

10 - Warden
20 - Deputy Warden
30 - Inspector
40 - Deputy Inspector
50 - Clerk

60 - Deputy Clerk
70 - Teller
80 - Substitute
90 - Custodian

ELECTION WORKER'S MASTER RECORD

Date: 3-25-14

Check One: ☒ New Employee
☐ Change to Existing Employee

Vendor # _____

Position INSPECTOR

Name: RITA HEAD

Democrat _____

Address: 37 AMHERST STREET

Republican _____

Unenrolled ☒

Zip Code: 02474

Precinct 14

Alpha/Last Name: _____

Phone # H - 781 - 646 - 3667

C - 781 - 583 - 7885

Position Codes:

10 - Warden
20 - Deputy Warden
30 - Inspector
40 - Deputy Inspector
50 - Clerk

60 - Deputy Clerk
70 - Teller
80 - Substitute
90 - Custodian

ELECTION WORKER'S MASTER RECORD

Date: 3/23/15

Check One: ☒ New Employee

☐ Change to Existing Employee

Vendor # _____

Position Warden

Name Julianne Kelly

Democrat ☒

Address 78 Summer St.

Republican ☐

Apt. 1

Unenrolled ☐

Zip Code 02474

Precinct 6

Alpha/Last Name _____

Phone # 781-648-6206

Position Codes:

10 Warden

20 Deputy Warden

30 Inspector

40 Deputy Inspector

50 Clerk

60 Deputy Clerk

70 Teller

80 Substitute

90 Custodian

ELECTION WORKER'S MASTER RECORD

Date: 3/24/15

Check One: ☒ New Employee
☐ Change to Existing Employee

Vendor # _____ Position INSPECTOR
Name MARY STRETTON Democrat ☒
Address 65 KENSINGTON PARK Republican _____
Unenrolled _____
Zip Code 02476 Precinct 10
Alpha/Last Name _____ Phone # _____

Position Codes:	10 Warden	60 Deputy Clerk
	20 Deputy Warden	70 Teller
	30 Inspector	80 Substitute
	40 Deputy Inspector	90 Custodian
	50 Clerk	



Town of Arlington, Massachusetts

Request: One Day All Alcohol License, 5/16/15 @ Fidelity House, 25 Medford Street for the Annual Fundraiser

Summary:

Ed Woods, Executive Director
Frank Tessitore

ATTACHMENTS:

Type	Description
 Reference Material	One Day Application

OFFICE OF THE BOARD OF SELECTMEN



TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

SPECIAL (ONE-DAY) LIQUOR LICENSE APPLICATION
(TO BE FILLED OUT BY EVENT REQUESTOR)

Name of Applicant: FRANK TESSITORE

Address, phone & e-mail contact information: 222 HIGHLAND AVE, ARLINGTON, MA 02476
781-863-0610 (w) 781-698-7543 (h) FRANK@OFTLAW.COM

Name & address of Organization for which license is sought: FIDELITY HOUSE
25 MEDFORD ST, ARLINGTON, MA 02478

Does this Organization hold nonprofit status under the IRS Code? ☒ Yes ☐ No

Name of Responsible Manager of Organization (if different from above):
ED WOODS, EXECUTIVE DIRECTOR; ALTERNATE- FRANK TESSITORE

Address, phone & e-mail contact information: 25 MEDFORD ST, ARLINGTON, MA 02478
781-698-2005 FIDELITYHOUSEOR@AOL.COM

Has the Applicant or Organization applied for and/or been granted a special liquor license this calendar year? NO If so, please give date(s) of special licenses and/or applications and title of event(s). N/A

Is this event an annual or regular event? If so, when was the last time this event was held and at what location?
ANNUAL EVENT - PREVIOUS MAY 3, 2014

24-Hour contact number for Responsible Manager on Event date: 781-698-2005 (w) 781-698-8635 (h)

Title of Event: ANNUAL FUNDRAISER

Date/time of Event: MAY 16, 2015 6:00 P.M. TO MIDNIGHT

Location of Event: FIDELITY HOUSE - 25 MEDFORD ST, ARLINGTON, MA *

Location/Event Coordinator: ED WOODS

* IN GYMNASIUM AND ADJOINING TENT IN PRIVATE PARKING LOT

Method(s) of invitation/publicity for Event: MAILING; CHURCH BULLETIN

Number of people expected to attend: 250

Expected admission/ticket prices: \$60/PERSON

Expected prices for food and beverages (alcoholic and non-alcoholic): FOOD INCLUDED IN TICKET PRICE; NON-ALCOHOLIC \$2; ALCOHOLIC \$3-\$5

Will persons under age 21 be on premises? NO

If "yes," please detail plan to prevent access of minors to alcoholic beverages. N/A

Have you consulted with the Department of Police Services about your security plan for the Event?

YES
For Police Chief, Operations Commander, or designee:

Your signature below indicates that you have discussed this event with the applicant, you have reviewed the applicant's security plan, and any necessary police details have been arranged for the Event.

Mc. Corey P. Rataeau date 3/17/15
Off. Coffey P. Rataeau
Printed name/title

POLICE COMMENTS:

Request at least one detail. One T.I.P.S
Certified bartender to be present at each point of
alcohol sales.

What types of alcoholic beverages do you plan to serve at the Event? (Note: By State Law, all-alcohol "one day" licenses are available only to nonprofit organizations.)

BEER, WINE, LIMITED MIXED DRINKS

What types of food and non-alcoholic beverages do you plan to serve at the Event?

BUFFET - MEAT, APPS, VEGETABLES, DESSERTS
BEVERAGES - WATER, JUICE, COFFEE

Who will be responsible for serving alcoholic beverages at the Event? MEMBERS OF

BOARD OF TRUSTEES

What training or certification in responsible alcohol service does this person have? Please attach certificate or other proof of training for at least one person who will have responsibility for serving alcoholic beverages at each point of service and who will be present for the entire Event.

SEE ATTACHED

Please list the names and dates of birth for all people who will be responsible for serving alcoholic beverages at the Event. Anyone serving alcoholic beverages must be at least 21 years of age.

SEE ATTACHED

Name of the Massachusetts wholesaler who will deliver to site? (Full supplier list available on the ABCC website: www.mass.gov/abcc)

WILL PURCHASE FROM MASS LIQUOR (MASSDAS) AVOID EXCESS WASTE (WASTAGE); DELIVERY ON OR BEFORE EVENT DATE

How, when, and by whom will excess alcoholic beverages obtained for the Event be disposed of?

IF ALLOWED BY WHOLESALE IT WILL BE RETURNED; OTHERWISE WILL BE GIVEN TO EVENT UNWANTED NEXT DAY AND REMOVED FROM LOCATION.

Please provide details (insurance company, type of policy, name of insured, and policy limits) of any relevant insurance coverage for the Event, included but not limited to General Liability and Liquor Liability insurance. (You may be asked to supply a certificate or other proof of adequate insurance coverage.)

EVENT COVERAGE OBTAINED THRU ARCHDIOCESE OF BOSTON

Please submit this completed form and filing fee to the Board of Selectmen at least 21 days before your Event. Failure to provide complete information may delay the processing of your application.

I HAVE READ AND UNDERSTAND ALL RULES AND REGULATIONS:

Signature: _____

Printed name: _____

Printed title & Organization name: _____

Email: _____

25 Medford Street
Arlington, MA 02474
781-648-2005
www.fidelityhouse.org



FIDELITY HOUSE

RECEIVED
SELECTMEN'S OFFICE
ARLINGTON, MA 02474
MAR 11 11 20 AM '15



Edward F. Woods
Executive Director

March 10, 2015

Department of Police Services
112 Mystic Street
Arlington MA 02476

Attention: Chief Ryan

Dear Chief Ryan:

Enclosed please find an Application for Special (One-Day) Liquor License for Fidelity House for its annual fundraiser to be held on May 16th, 2015. The event will be held at Fidelity House at its location at 25 Medford Street, Arlington, Massachusetts. Pursuant to the application, Fidelity House is required to submit a security plan to the Department of Police Services for their approval. Accordingly, the application is attached, and an explanation is provided below regarding the security plan for the event. If satisfactory could you please sign and date on page two and return to me at the address above. I can then submit to the Board of Selectmen for approval.

As indicated above, the event will be held at Fidelity House at its 25 Medford Street location on May 16th, 2015. The security plan for crowd control, unruly patrons, emergency evacuations, traffic/parking considerations and controlling access to alcohol by underage persons will entail the following:

1. Police detail will be requested. Typically, the detail officer is stationed inside the gymnasium where the majority of seating is located and the evening's events, such as a silent and live auction, take place. Several event volunteers also circulate all evening to observe all activity and persons.
2. All entrances are closed, and one entrance only for ticketed guests is manned by staff. Proof of purchased ticket is required for entrance. All emergency exits are clearly marked in the entire building pursuant to the licensing requirements of Fidelity House for its various children's programs. Staff members of Fidelity House will be present at the event and are trained in the facility's emergency evacuation plans.
3. No guest under the age of 21 is permitted to attend the event. No staff person or volunteer is under the age of 21.
4. Admission to the event is limited to ticketed guests who will pay \$60 per person for admission. Ticket price includes a buffet meal. Beverages are not included. Beverages that can be purchased include soft drinks, water, beer, wine and limited mixed drinks.

Department of Police Services
Attention: ???
March 26, 2013
Page -2-

5. Purchase of beverage tickets is at manned stations separate from the areas in which beverages are purchased and served. Cash from the stations selling the beverage tickets is collected on a regular basis and secured in a safe in an office located in the administrative portion of the building. The collection of cash is done on a regular basis throughout the evening.

6. All persons selling beverage tickets are over the age of 21 and provide observation and feedback to the appropriate parties if any unusual circumstances are detected.

7. The bartenders provide a second set of observations with respect to guests and are instructed to report any unusual circumstances to the appropriate persons.

8. One person is designated to act as the alcohol supervisor for the evening and would be the designated person for either the ticket sellers or bartenders to report any unusual activities. This person would then coordinate with the detail police officer to take any necessary precautions.

9. No alcohol or other beverages from the outside are permitted into the event.

10. The serving of alcohol will end at 11:00 p.m., approximately one hour before the end of the event.

11. Traffic/parking is handled in the same manner as activities at St. Agnes Church or St. Agnes School. Parking is available in the school parking lot, the municipal parking lot and on street.

If you have any further questions or wish to add feedback or consult regarding the plan, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Ed Woods', with a stylized, cursive script.

Ed Woods
Executive Director

Enclosure



©TIPS On Premise 2.0

SSN: XXX-XX-XXXX

Issued: 04/30/2013

Expires: 04/30/2016

ID#: 3459988

D.O.B.: XXXXXXXXX

Gregory Zoeller

3 Beverly Rd
Arlington, MA 02474-1212 USA



eTIPS On Premise 2.0

SSN:

XX-XX-XXXX

Issued:

4/27/2013

Expires:

4/27/2016

ID#:

3457472

D.O.B.:

XXXXXXXX

Jim Wells
Knights of Columbus
Columbus Club of Arlington
15 Winslow St
Arlington, MA 02474-3048

For service visit us online at www.gettips.com

FIDELITY HOUSE

Greg Zoeller	TIPS Certified	#3459988
Jim Wells	TIPS Certified	#3457472
Fred Harris	D/O/B August 4, 1961	
Paul McDonald	D/O/B August 23, 1952	
Jack Keefe	D/O/B August 9, 1953	
Tom Fitzgerald	D/O/B July 7, 1953	



Town of Arlington, Massachusetts

Approval: 3rd Annual Bladder Cancer Awareness Walk, Saturday, 5/9/15

Summary:

Linda and Tracy Magram

ATTACHMENTS:

Type	Description
 Reference Material	Memo from Police, Request from L. Magram

ARLINGTON POLICE DEPARTMENT

CHIEF OF POLICE
Frederick Ryan



Town of Arlington
MASSACHUSETTS 02474

POLICE HEADQUARTERS
112 Mystic Street
Telephone 781-316-3900
Facsimile 781-316-3919

MEMORANDUM

TO: Marie Krepelka
Board Administrator

FROM: Officer Corey P. Rateau
Traffic and Parking Unit

DATE: March 12, 2015

RE: Bladder Cancer Awareness Walk 2015

At your request, I looked into Ms. Linda Magram's request to host her third annual Bladder Cancer Awareness Walk on Saturday, May 9, 2015. We have no objection to issuing a permit to this small group of approximately 25-30 to walk along the sidewalks of Mass Ave between Forest Street and Town Hall as long as they adhere to all traffic laws when crossing the street and make room for other pedestrians who wish to pass. Also, any participants wishing to park in the area must obey any posted parking restrictions.

Ms. Magram must contact this Department by April 20, 2015 if the number of expected participants increases to 40+ people so that other safety considerations can be discussed.

CPR

Cc: Frederick Ryan, Chief of Police
Capt. Julie Flaherty, Support Services Commander
Lt. Paul Conroy, OIC / Details, Traffic and Licensing
Adam Chapdelaine, Town Manager

"Proactive and Proud"

From: "Magram, Linda" <Linda.Magram@hnhco.com>
To: "mkrepelka@town.arlington.ma.us" <mkrepelka@town.arlington.ma.us>
Cc: Tracy Magram <tramag1@yahoo.com>
Date: 03/07/2015 09:48 AM
Subject: Bladder Cancer Awareness Walk in Arlington, MA; 5/9/15

Dear Marie,

I hope you are doing well and have weathered this winter well. It's been tough!

Once again, my sister Tracy and I would like to host the BCAN walk in Arlington. We are looking at Saturday, May 9 and will plan on doing the same route up Mass Ave. to the Town Hall and back to Frazer Rd. Last year we were able to raise \$7000!

Please let us know when we should plan on attending the town hall meeting.

Thanks once again for your help.

Best,

Linda

Linda Magram
781-354-7999 cell
216 Sylvia Street
Arlington, MA 02476

linda.magram@hnhco.com



Town of Arlington, Massachusetts

Disabilities Commission

Summary:

Beverly Bevilacqua
Susan Savage Tennant
(terms to expire 6/30/2018)

ATTACHMENTS:

Type	Description
<input type="checkbox"/> Reference Material	Bevilacqua Reference
<input type="checkbox"/> Reference Material	Tennant Reference



**Town of Arlington
Office of the Town Manager**

Adam W. Chapdelaine
Town Manager

730 Massachusetts Avenue
Arlington MA 02476-4908
Phone (781) 316-3010
Fax (781) 316-3019
E-mail: achapdelaine@town.arlington.ma.us

MEMORANDUM

DATE: March 19, 2015
TO: Board Members
SUBJECT: Appointment to Disability Commission

This memo is to request the Board's approval of my appointment of Beverly Bevilacqua, 83 Dothan Street to the Disability Commission with a term expiration date of 6/30/2018.


Town Manager

Beverley Bevilacqua

83 Dothan Street

Arlington, MA 02474

781-234-8669

MT
2:30pm
3/10/15
@ BOH office

Dear Christine,

I am very interested in being a member of the Arlington Disability Commission. I believe my training as a nurse as well as many life and work experiences with handicapped people would serve me well in my role on the commission. Below I have listed some of these:

- A nurse at the Fernaud School with physically and mentally disabled
- A nurse at Adult Day Care Center at Arlington Senior Center- CESI
- Volunteered for years at with the Arlington Seniors Association, enjoying the diversity of personalities and perspectives.

I am interested in physical and mental disabilities especially in seniors – I have a disability myself (blindness - and would enjoy developing programs to educate Arlingtonians to the realities of being disabled.

I could assist in identifying problems and following up on suggested remedies.

I have always been very dedicated and persistent in any endeavor I have undertaken and I am a certain I will approach my role on the Commission in the same way.

Thank you for considering me,

Beverly Bevilacqua

OFFICE OF THE BOARD OF SELECTMEN

STEVEN M. BYRNE, CHAIR
JOSEPH A. CURRO, JR., VICE CHAIR
KEVIN F. GREELEY
DIANE M. MAHON
DANIEL J. DUNN



730 MASSACHUSETTS AVENUE
TELEPHONE
781-316-3020
781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 17, 2015

Beverly Bevilacqua
83 Dothan Street
Arlington, MA 02474

Re: Appointment: Disabilities Commission

Dear Ms. Bevilacqua:

As a matter of the standard appointment procedure, the Board of Selectmen requests that you attend a meeting of the Board of Selectmen at Town Hall, Selectmen's Chambers, 2nd Floor, 730 Massachusetts Avenue, on Monday, March 30th at 7:15 p.m.

It is a requirement of the Board of Selectmen that you be present at this meeting. Your presence will give the Board an opportunity to meet and discuss matters with you about the area of activity in which you will be involved.

Please contact this office to confirm the date and time with either Mary Ann or Fran at the above number.

Thank you.

Very truly yours,
BOARD OF SELECTMEN

A handwritten signature in cursive script, reading "Marie A. Krepelka".

Marie A. Krepelka
Board Administrator

MAK:fr



Town of Arlington
Office of the Town Manager

Adam W. Chapdelaine
Town Manager

730 Massachusetts Avenue
Arlington MA 02476-4908
Phone (781) 316-3010
Fax (781) 316-3019
E-mail: achapdelaine@town.arlington.ma.us

MEMORANDUM

DATE: March 19, 2015

TO: Board Members

SUBJECT: Appointment to Disability Commission

This memo is to request the Board's approval of my appointment of Susan Savage Tennant, 11 Alfred Road to the Disability Commission with a term expiration date of 6/30/2018.


Town Manager

3/10 3:30pm

Susan Savage Tennant

11 Alfred Rd, Arlington MA 02474
Home: 781-6461916 Cell: 415-250-1359
SSavage0164@aol.com

Executive Profile

Program Designer and Manager with over 35 years experience creating and providing positive community based life supports for individuals of all ages with developmental and behavioral challenges. Responsible for all operational aspects of a continuum of services in a broad array of settings, including: schools, family homes, group homes, supported/assisted living; day/vocational training centers and crisis residential and mobile crisis intervention.

Skill Highlights

- Executive management
- Program design
- Staff development
- Quality assurance
- Regulatory compliance
- Strategic intervention
- Consumer outreach
- Community networking

Core Accomplishments

Executive Management:

- Recruited and supervised a staff of 300 across a disseminated management model spanning over 400 miles in Northern and Central California.
- Managed an annual budget of 10 million dollars.
- Identified and trained a Resource Team that maintained qualitative consistency through a streamlined approach to in house troubleshooting and problem resolution.

Program Design and Innovation:

- Created an alternative model of service to address the needs of dual diagnosis consumers whose needs were not adequately addressed by existing psychiatric services.
- Preserved community living arrangements for at risk consumers through the provision of immediate response practical crisis intervention and follow up.
- Maintained a "zero failure " policy for program participants employing only positive behavioral supports.

Professional Experience

STA NorCal Developmental Services Inc
CEO

December 1983 to December 2014

San Rafael, CA

Envisioned, grew and managed a continuum of community based services for individuals with developmental and behavioral challenges. Starting with a 6 bed experimental program for individuals deemed "unacceptable" for community living, the program assisted in moving people out of antiquated institutional settings and back into their communities; concurrently identifying support needs, then creating services to address them. Owing to our philosophical policy of unconditional care, the agency became a safety net for those with the most extreme of behaviors, at high risk of loss of community placement.

Organizational development and expansion remained in response to the changing needs of the consumer base, with an unyielding commitment to inclusion and the value of the individual.

Eventually, services expanded to service 450 consumers across 25 settings. Through a mix of in house promotion and field recruitment, a Resource and Management Team was assembled for the purpose of development and support of the projects and staff.

Education

Northeastern University

1980

M.Ed coursework: Severe Special Needs

Boston, MA, USA

Completed extensive graduate coursework in the field of severe special needs including: life span management, learning disabilities, developmental psychology and family systems.

University of Massachusetts

1977

Bachelor of Arts: Urban Education

Amherst, MA, USA

Through this field of study, which focused on the motivational challenges of inner city students with learning differences and the difficulty of full inclusion, I was drawn into what would become a lifelong passion: deinstitutionalization and support to individuals with developmental disabilities. Through an adjunct practicum in what was then known as Belchertown State School for the Mentally Retarded, my eyes were opened to the similarities shared by all students and the need to remedy the exclusion and isolation of those identified as "different".

OFFICE OF THE BOARD OF SELECTMEN

STEVEN M. BYRNE, CHAIR
JOSEPH A. CURRO, JR., VICE CHAIR
KEVIN F. GREELEY
DIANE M. MAHON
DANIEL J. DUNN



730 MASSACHUSETTS AVENUE
TELEPHONE
781-316-3020
781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 17, 2015

Susan Savage Tennant
11 Alfred Road
Arlington, MA 02474

Re: Appointment: Disabilities Commission

Dear Ms. Tennant:

As a matter of the standard appointment procedure, the Board of Selectmen requests that you attend a meeting of the Board of Selectmen at Town Hall, Selectmen's Chambers, 2nd Floor, 730 Massachusetts Avenue, on Monday, March 30th at 7:15 p.m.

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Please contact this office to confirm the date and time with either Mary Ann or Fran at the above number.

Thank you.

Very truly yours,
BOARD OF SELECTMEN

A handwritten signature in cursive script, reading "Marie A. Krepelka".

Marie A. Krepelka
Board Administrator

MAK:fr



Town of Arlington, Massachusetts

Hearing - Report of Underage Sales

Summary:

a) Hope Color, Inc. d/b/a Mr. Sushi
693 Mass. Ave., Daniel Ahn, Manager

b) Paramveer Corp. d/b/a Punjab Fine Indian Cuisine,
485-87 Mass. Ave., Jaspal S.Pabla, Manager

c) Y Plus Y, Inc. d/b/a Fusion Taste
303A-305 Broadway, Jason Zhen Ye, Manager

ATTACHMENTS:

Type	Description
☐ Reference Material	REVISED reference: D. Heim Memo, Police Sting Report, Alcohol Policy, Hearing Notices
☐ Reference Material	Alcohol Licenses and Regulations - Handbook




**Town of Arlington
Legal Department**

Douglas W. Heim
Town Counsel

50 Pleasant Street
Arlington, MA 02476
Phone: 781.316.3150
Fax: 781.316.3159
E-mail: dheim@town.arlington.ma.us
Website: www.arlingtonma.gov

To: Board of Selectmen

Cc: Adam Chapdelaine, Town Manager
Frederick Ryan, Chief of Police
Christine Connolly, Director of Health and Human Services

From: Douglas Heim, Town Counsel 

Date: March 26, 2015

Re: Alcohol Compliance Checks 2015

On January 22, 2015, the Police Department conducted alcohol compliance checks of fifteen (15) of Arlington's licensed restaurants as part of its 2015 Compliance Check operations. The January 22nd operation is detailed in Incident Report ##15001756, a copy of which is attached hereto. Three (3) of the tested restaurants failed the compliance check by serving alcoholic beverages to underage operatives who volunteered for the Police Department's compliance operation.

These three restaurants found to have served beverages to the operatives as detailed in the Incident Report are as follows:

- Mr. Sushi
693 Massachusetts Avenue;
- Punjab Fine Indian Cuisine
458-87 Massachusetts Avenue; and
- Fusion Taste
303A-305 Broadway Massachusetts Avenue.

Each of the licensed restaurants who failed the compliance check have been notified by first-class mail and certified mail, return receipt requested, to appear at the Board's March 30, 2015 Hearing concerning the alleged violations.

The events set forth in the attached incident report, if true, demonstrate a violation of the state liquor licensing law and the regulations of the Alcohol Beverages Control Commission ("ABCC"). Specifically, Section 34 of Chapter 138 prohibits the sale or delivery of alcoholic beverages to a person under 21 years of age. The ABCC regulation located at 204 C.M.R. 2.05(2) prohibits any illegality (such as a violation of Section 34) on licensed premises.

If, after a hearing, the Board concludes that violations of the law occurred, it may decide to "modify, suspend, revoke, or cancel" the liquor license of these three establishments. See G.L. c. 138, § 23. Upon information and belief, none of the restaurants at issue have previously failed a compliance check. As such, the Board's Alcohol Licenses and Regulations, recently revised on January 12, 2015, suggest a 3-5 day license suspension for a first offense of serving alcohol to an underage person. The relevant excerpts from the Board's regulations have been provided by your office. If the Board does decide to suspend these licenses, I note that under the Board's revised policy, the suspensions should begin on the same day of the week as the offense occurred following the Board's approval of a written decision developed by this Office.


**ARLINGTON POLICE
ARLINGTON, MA**
INCIDENT # / REPORT #
15001756 / 1

OFFICER
PORCIELLO

RANK
INSP

REVIEW STATUS
APPROVED

INCIDENT #15001756 DATA

As Of 01/22/2015 20:35:24

BASIC INFORMATION
CASE TITLE
ALCOHOL COMPLIANCE CHECKS

LOCATION
112 MYSTIC ST

APT/UNIT #
DATE/TIME REPORTED
01/22/2015 17:35:01

DATE/TIME OCCURRED
On or about 01/22/2015 17:35

INCIDENT TYPE/OFFENSE
ASSIST

[NO PERSONS]

[NO OFFENDERS]

[NO VEHICLES]

[NO PROPERTY]

OFFICER REPORT: 15001756 - 1 / PORCIELLO (INSP)
DATE/TIME OF REPORT
01/22/2015 17:35:01

TYPE OF REPORT
INCIDENT

REVIEW STATUS
APPROVED

NARRATIVE

On January 22, 2015, I, Inspector Porciello along with Inspector Fennelly conducted several checks of restaurants with licenses to serve alcohol in Arlington. We worked with 1 female and 1 male whom were each under the age of 21. Prior to conducting the checks the male and female were both breathalyzed by Officer Urquhart and both blew 0.00. The male and female were both photographed and they were given alcohol compliance program release forms along with the recommended guidelines for conducting underage sting operations. Both parties read, reported that they understood and signed the forms and I signed as the witness. Both parties removed all money and forms of identification that they had. Their money and identification cards were secured in the CIB. Due to a lack of memory cards the photographs of the operatives were saved on the internal memory of the CIB camera.

I was then given 5 \$20.00 bills. The following are the results of our compliance checks.

-At 6:19PM the operatives entered Menotomy Bar and Grill at 25 Mass Ave. No alcohol was served.

-At 6:27PM the operatives entered Kathmandu Spice located at 166 Mass Ave. No alcohol was served.

-At 6:38PM the operatives entered Sabzi located at 352a Mass Ave. No alcohol was served.

-At 6:45PM the operatives entered the Common Ground located at 319 Broadway. No alcohol was served.

-At 6:50PM the operatives entered Fusion Taste located at 303 Broadway. They entered with a \$20.00 bill. They ordered 2 Bud Lights from an Asian woman with long dark hair who had an average build and appeared to be in her fifties. The woman was not wearing a name tag. The two operatives were served the Bud Lights but were not given a receipt. They exited Fusion Taste at 6:56PM with \$12.00.

-At 7:09PM the operatives entered WooRi located at 9A-B Medford St. No alcohol was served because the restaurant was not serving alcohol.

-At 7:15PM the operatives entered Acitron located at 473 Mass Ave. No alcohol was served.

-At 7:19PM the operatives entered Punjab located at 485 Mass Ave. They entered with a \$20.00 bill and ordered two Bud Lights. The server was not wearing a name tag but was a short Indian female in her early twenties. She had medium length dark hair. The operatives were served the two Bud Lights and were given a receipt showing that the 2 beers cost \$6.42. The operatives exited Punjab at 7:28PM and returned \$13.58.

-At 7:35PM the operative entered Not Your Average Joes located at 645 Mass Ave. No alcohol was served.

-At 7:43PM the operatives entered Pasha located at 669A Mass Ave. No alcohol was served.

-At 7:48PM the operatives entered Thai Moon located at 663 Mass Ave. No alcohol was served.

-At 7:54PM the operative entered Tryst located at 689 Mass Ave. No alcohol was served.

-At 8:02PM the operatives entered Mr. Sushi located at 693 Mass Ave. The operatives entered Mr. Sushi with a \$20.00 bill. Inside the operatives ordered two Bud Lights. The server was a tall Asian male with shaggy dark hair. He was wearing glasses, had acne and appeared to be in his middle twenties. It was reported that this male was not wearing a name tag. The operatives were served two Bud Lights and were given a receipt. The receipt showed that the two Bud Lights cost \$10.70. The operatives exited Mr. Sushi at 8:17PM and returned \$9.30.

It should be noted that the servers were never witnessed by Inspectors and were reported to us by the operatives.

Once back at the station the 2 receipts from Mr. Sushi and Punjab were bagged as evidence. The evidence bag was then placed in evidence locker 2. The operatives were again breathalyzed by Officer Urquhart and again both blew 0.00.

The remaining \$74.88 was returned.

TOWN OF ARLINGTON

Massachusetts
BOARD OF SELECTMEN

ALCOHOL LICENSES AND REGULATIONS



CERTIFICATION OF LICENSE APPLICANTS

All license applicants must sign a certification attesting that they have read and understood the Town policies, rules, and regulations relevant to their license.

The certification form is available at the Board of Selectmen's Office, and should be filed concurrently with any and all alcohol license applications.

TYPES OF LICENSES TO BE GRANTED IN ARLINGTON

	Page
• Alcohol Licenses for Restaurants (both all alcohol and wine and malt only restaurants).....	3
• All Alcohol Package Store Licenses.....	10
• Special (One-Day) Liquor License Policy.....	16
• Licenses for the Sale of Wine and Malt Beverages to be Consumed on the Premises in Theaters.....	18
• Sale of Wine at Farmers' Markets.....	24
• Caterer's License.....	26
• Club Licenses.....	27

Policies, Rules, and Regulations of Alcohol Licenses for Restaurants

Approved: 9/21/09

Revised: 9/10/12

Revised 1/12/15

I. Introduction

A. General Statement of Policy

The Town of Arlington is home to a wide array of high-quality eating establishments. As the local licensing authority for all sales of alcoholic beverages in the Town of Arlington, the Board of Selectmen ("Board") wishes to support the existing restaurant culture and to stimulate its further growth through the issuance of liquor licenses to restaurants as appropriate. The Board also intends that all service and consumption of alcohol in the Town of Arlington be done responsibly and in conformance with all legal requirements. In service of these goals, licenses will be issued under these Policies, Rules, and Regulations only to holders of Common Victualler Licenses and with the consistent expectation that licensees will conduct their establishments to the highest standards.

The Board intends that the issuance of liquor licenses will contribute to the Town's development in the following respects:

- (1) Bring to the Town quality restaurants and function rooms that provide fine dining opportunities in attractive surroundings;
- (2) Provide convenient and attractive parking options;
- (3) Improve the variety of shops in Arlington;
- (4) Promote increased foot traffic; and
- (5) Strengthen the Town's commercial tax base.

Consequently, the Board's consideration of license applications will include location, proximity of proposed premises to residential neighborhoods or business areas, traffic impact, parking availability, content of proposed menu and other aesthetic considerations, including design and layout of the proposed establishment's interior. All required notification of applications for new licenses, amended licenses, or license transfers must be provided to abutters and other affected parties in accordance with state law.

B. Conditions of Licensure: Compliance with Legal Requirements

Liquor licenses are subject to these Policies, Rules, and Regulations as well as relevant provisions of state law (Chapter 138 of the Massachusetts General Laws) and the rules, regulations, and other guidance of the Alcoholic Beverages Control Commission, as they may be from time to time amended. Further, the Board may attach such conditions and restrictions to each license it issues as it deems to be in the public interest. All licensees must be familiar with all requirements that apply to their licenses and must abide by those requirements in the operation of their establishments. In addition to legal provisions governing liquor licenses, licensees must also maintain compliance with all other requirements that apply to the operation of

licensed premises, including but not limited to the State Building Code, Fire Code, and Common Victualler License requirements as well as all applicable Town Bylaws and codes. Failure to comply with these or any other applicable provisions may lead to further conditions being placed upon the license or to license suspension or revocation.

II. Licensing

A. Types of Licenses, Seating Capacity

The Board is authorized to issue two types of licenses for the sale of alcohol to be consumed on the premises: (1) All-Alcohol; and (2) Wine and Malt Beverages. All-Alcohol Licenses may be issued for restaurants having a minimum seating capacity of 50. Wine and Malt Beverage Licenses may be issued for restaurants having a minimum seating capacity of 19. Holders of licenses to sell wine and malt beverages for consumption on the premises may not sell cordials or liqueurs unless and until the Town adopts local-option legislation to allow such sales. Seating capacity will be determined in accordance with the applicable provisions of the Massachusetts State Building Code. Unless specified otherwise, these Policies, Rules, and Regulations apply to both All-Alcohol and Wine and Malt Beverages licenses.

B. Application Process

1. Forms: Application for a license to sell alcoholic beverages for consumption on the premises requires submission of the following forms, in addition to any other information required by Chapter 138 of the General Laws or the rules, regulations, or policies of the Alcoholic Beverages Control Commission:

- (a) Alcoholic Beverages Control Commission application form;
- (b) Town of Arlington application form;
- (c) Criminal Offender Record Information ("CORI") release form; and
- (d) Department of Revenue release form.

The Board reserves the right to decline to process incomplete applications and to supplement or substitute required application materials at any time. Complete application information must be provided for each individual appearing on the application.

2. Fees:

- (a) filing fee: A non-refundable filing fee of \$100 must be submitted with each application;
- (b) license fees: If a license is granted, the following annual license fee shall be due at the time the license is issued and upon each renewal:
 - (i) All Alcohol License: \$3,000. By vote of the Board, this annual fee may be prorated for licenses granted after January 1, but in no event shall it be less than \$1,500.
 - (ii) Wine and Malt Beverage License: \$1,750. By vote of the Board, this annual fee may be prorated for licenses granted after January 1, but in no event shall it be less than \$600.

- (iii) Reductions: The Board may choose to reduce the annual license fee by \$400 for All-Alcohol Licenses and by \$200 for Wine and Malt Beverages Licenses for applicants who demonstrate successful completion of a certified server-training program.
- (c) the Board reserves the right to adjust any of the fees listed above from year to year.
- (d) form of payment: All payments must be made by certified or personal check.
- 3. Building and Site Plan: Every application must include the following information for the proposed licensed premises on a clear and accurate scale drawing;
 - (a) The net floor area and dimensions of the existing room or rooms requested to be licensed, including dining rooms, function rooms, and storage rooms;
 - (b) The location of any proposed service bars;
 - (c) Moveable or secured seats and tables;
 - (d) Entrance and exit doors, windows, and stairs; and
 - (e) All rooms that are not requested to be licensed, but are on the same floor as the room or rooms that are requested to be licensed, identified as to function (e.g., kitchen, coatroom, lobby).
- 4. Corporate Ownership and Interest:
 - (a) application materials: Every application made by a corporate entity shall state the full name and home address of the entity's president, treasurer, clerk, secretary, directors, investors, developers, managers, or any other person with a financial interest in the entity. The application shall be signed by a corporate officer duly authorized by a vote of the entity's board of directors or equivalent governing board. Copies of the following documents shall be filed with the application: the entity's certificate of incorporation, the vote authorizing the application, and the vote appointing the manager or other principal representative with respect to the license being requested.
 - (b) manager or principal representative: No corporate entity may receive a license to sell alcoholic beverages for consumption on the premises unless such entity shall have first appointed, by a vote of its board of directors or equivalent governing board, a manager or principal representative who is (1) a citizen of the United States; (2) vested with properly voted authority (evidenced by written delegation) over the premises to be licensed and the conduct of all business to be conducted thereon to the same extent that the licensee itself would be if a natural person resident in the Commonwealth; and (3) satisfactory to the Board.
 - (c) change in interest: Except as otherwise provided by law, no change in the stock ownership of a corporate entity shall be made after the license has been granted or renewed without the express written approval of the Board.
- 5. Advertising & Notification: The applicant is responsible for complying with state-law requirements for advertising and written notification, including but not limited to

requirements set forth in Sections 15A and 16C of Chapter 138 of the General Laws. The Board reserves the right to order additional notification.

6. Statements in Application Materials: Any false statement made in connection with an application shall be cause for denial of the license or for suspension, cancellation, or revocation of a license already granted.

C. License Duration, Renewals

Once issued, licenses are valid until December 31. The licensee is responsible for filing a renewal application at least 45 days before December 31. At the time of renewal, all previously submitted materials must be updated as appropriate and the required fee must be paid. The Board or its designee shall inspect the licensed premises prior to renewal and the complete inspection report must be filed with every renewal application. A renewal application that fails to meet any of these requirements will be treated as an original license application

III. Operation of Licensed Premises

A. Hours

Unless otherwise fixed for a particular license, licensees may sell alcoholic beverages for consumption on the premises between the hours of 11:00 a.m. and 12:00 midnight daily, provided that food service is available during all hours in which alcoholic beverages are offered for sale. All alcoholic beverages and containers must be removed from tables and service bars one-half hour after closing time. Patrons must be off the licensed premises one hour after closing time. The licensee, the licensee's manager or principal representative, and employees or subcontractors of the licensee may be on the licensed premises after closing only in accordance with Chapter 138 of the General Laws.

B. Supervision, Order, and Decorum

The licensee or licensee's manager or principal representative shall be present at the licensed premises at all times during which alcoholic beverages are offered for sale. The licensee may designate and authorize some other person to act as the responsible manager and be present at the licensed premises while alcoholic beverages are offered for sale, provided that this person shall first have been identified to, and approved by, the Board. The designated manager or representative described in this section shall be available to the Board or its designee at all times during which alcoholic beverages may be sold on the licensed premises. The full name, current residential address, and current business and home telephone numbers of all designated managers or representatives described in this section shall be on file with the Board. Failure to provide this information and keep it current shall alone be sufficient cause for suspension or revocation of the license.

The manager or representative on site shall at all times maintain order and decorum on the premises and in the area immediately surrounding the premises. These areas must be kept clean, neat, and sanitary at all times. The manager or representative on site shall cooperate in all ways with Town officials, including but not limited to representatives of the Board, the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

C. Inspections

At any time, licensed premises are subject to inspection by the Board or its designee, including but not limited to the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

D. Physical Plant

The location of service bars shall not be changed without the submission of an amended floor plan to the Board and the Board's written approval. No premises will be licensed unless adequate and appropriate toilet facilities are available to patrons. No amusement devices such as electronic games shall be permitted on any licensed premises. All licensed establishments shall have suitable appliances to maintain water temperature consistently at 180° so that eating, drinking, cooking, and serving utensils are thoroughly cleaned and sanitized. Licensed premises shall not allow in windows or on outside walls the posting of advertisements or signs carrying the brand name of any alcoholic beverages. Signage on the inside of licensed premises is subject to Board approval.

E. Service and Consumption of Alcoholic Beverages and Food

1. Service of Alcoholic Beverages: Alcoholic beverages may be served only by wait staff of the licensed establishment. No pitchers of beer may be served. No alcoholic beverages may be served over a counter except a counter with fixed seating at which food service is also available. No alcoholic beverages may be served in the same area or over the same counter at which take-out food is made available for delivery or pick-up.

2. Service of Food: Food service must be available in all areas in which alcoholic beverages are served. No more than two alcoholic beverages per person may be served without food. After two alcoholic beverages have been served and consumed, a third such beverage may be served only with the delivery of food. Food must be served on solid, reusable dinnerware with silverware. Paper plates, disposable glasses, or plastic cutlery are not permitted.

3. Consumption of Alcoholic Beverages on the Premises: Only alcoholic beverages sold on the licensed premises shall be consumed on the premises: no patron shall be permitted to bring alcoholic beverages purchased off-site onto any licensed premises for consumption. All alcoholic beverages purchased on the premises shall be consumed on the premises, except unfinished bottles of wine re-sealed in accordance with Chapter 138, Section 12, of the General Laws and regulations of the Alcohol Beverages Control Commission. Even if the licensee's Common Victualler permit allows for outdoor seating, alcoholic beverages may be served in an outdoor space only if: (1) the description of the licensed premises expressly includes such outdoor space; (2) the outdoor space is surrounded by a suitable barrier or other physical element that maintains separation between the licensed premises and the general public; (3) the outdoor space is privately owned, or the outdoor space is on a public way and the owner of the licensed premises: a) obtains permission for such use from the Board, b) agrees to indemnify and hold harmless the Town of Arlington and all of its officers, officials, and assigns from any and all claims connected with their use of public ways areas described in the licensed premises, c) presents proof of insurance for its use of same, and d) complies with all other town, state, and federal laws including maintaining Americans with Disabilities Act (ADA) compliance; and (4) the Board is satisfied that neither the safety, nor the enjoyment of public ways shall be unreasonably compromised by issuance of a license permitting outdoor service of alcohol on a public way. All outdoor food and alcohol service shall conclude before 10:00 p.m. Thursday through Sunday, and 11:00 p.m. Friday and Saturday, unless otherwise affixed on a particular license as approved by the Board.

IV. Status of License

A. Exercise of License: Once a license is granted under these Policies, Rules, and Regulations, the licensee shall commence construction or alteration of the licensed premises within forty-five days and shall be in full operation within four months, unless a longer period is authorized by the Board. Thereafter, the licensee shall operate the licensed premises continuously in accordance with the terms of the license.

Closing of the licensed premises for seven consecutive days or for any ten days during the calendar year (other than outside the establishment's normal business hours) without prior written approval of the Board shall be considered abandonment of the license and sufficient grounds for revocation.

B. Violations

1. Generally: Any violation of Chapter 138 of the General Laws pertaining to licenses for the sale of alcoholic beverages to be consumed on the premises; any violation of the rules, regulations, or policies of the Alcoholic Beverages Control Commission relative to the sale of alcoholic beverages to be consumed on the premises; any violation of these Policies, Rules, and Regulations; or any violation of the conditions attached to any license granted under these Policies, Rules, and Regulations may result in additional conditions being placed on the license or in the cancellation, suspension, or revocation of the license following a hearing before the Board. Any action taken under this section shall be commenced by written notification to the licensee at the address on file with the Board. A hearing held under this section shall commence within two weeks or as soon as reasonably practicable thereafter following written notification. The Board or its agents may seize a license immediately if, in the Board's discretion, public health or safety warrants such a seizure and the penalty must begin on the same day of the week as the violation occurred. If a license is seized immediately, a hearing will be commenced within two weeks of the seizure, unless the licensee assents in writing to a longer time.

2. Service to Underage Individuals: If, after notice and a hearing, the Board or its designee concludes that an under-aged person was served alcohol at a licensed establishment, the Board shall suspend the license as provided below, or for such other time as the Board in its discretion shall choose.

First offense:	3-5 days suspension
Second offense:	6-10 days suspension
Third offense:	10-15 days suspension or revocation

This section shall not impair the Board's discretion to impose some other type of penalty in place of license suspension if the Board concludes that another penalty is appropriate. Such other penalties may include (but are not limited to) rolling back hours of operation, fixing other conditions on the license, or suspending or fixing conditions on the licensee's other licenses, such as Common Victualler or entertainment.

In fixing the penalty for sales to underaged individuals, the Board may consider the following factors:

- (a) licensee's policies and procedures and application of those policies and procedures to guard against service to underaged individuals;
- (b) severity and type of offense;
- (c) efforts made to identify purchasers of alcohol;
- (d) appearance of the underaged purchaser of alcohol;
- (e) quality of the evidence of a violation;
- (f) circumstances of the case; and
- (g) number and nature of licensee's previous violations.

C. Transfers

Licenses granted under these Policies, Rules, and Regulations may not be transferred or assigned except with the approval of the Board and in accordance with Chapter 138 of the General Laws and rules, regulations, and policies of the Alcoholic Beverages Control Commission.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Daniel Ahn, Manager
Hope color, inc. d/b/a Mr. sushi
693 Massachusetts Avenue
Arlington, MA 02476

2. Article Number

(Transfer from service label)

7011 3500 0001 2534 9061

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Nittanya*☒ Agent☐ Addressee

B. Received by (Printed Name)

Nittanya

C. Date of Delivery

3-7-15

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☒ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Jaspal S. Pabla, Manager
Paramveer corporation
Punjab Fine Indian Cuisine
485-87 Massachusetts Avenue
Arlington, MA 02474

2. Article Number

(Transfer from service label)

7013 0600 0000 4697 8179

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Jaspal Pabla*☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

3-7-15

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☐ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Jason Zhen Ye, Manager
Y Plus 4, inc. d/b/a Fusion Taste
303 A - 305 Broadway
Arlington, MA 02474

2. Article Number

(Transfer from service label)

7013 0600 0000 4697 8162

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Rachel Chen*☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

OFFICE OF THE BOARD OF SELECTMEN

STEVEN M. BYRNE, CHAIR
JOSEPH A. CURRO, VICE CHAIR
KEVIN F. GREELEY
DIANE M. MAHON
DANIEL J. DUNN



730 MASSACHUSETTS AVENUE
TELEPHONE
781-316-3020
781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 5, 2015

By Certified Mail, Return Receipt Requested
& By First Class Mail

Daniel Ahn, Manager
Hope Color, Inc. d/b/a Mr. Sushi
693 Massachusetts Avenue
Arlington, MA 02476

Licensee: Hope Color, Inc. d/b/a Mr. Sushi
Licensed Premises: 693 Massachusetts Avenue, Arlington, MA.
License No.: 003000034
License Type: Restaurant Liquor License (Sale of Alcoholic Beverages to be Consumed on the Premises)
Expiration Date: December 31, 2015

Dear Mr. Ahn:

In accordance with G.L. c. 138, §§ 23, 64, the Board of Selectmen, as the liquor licensing authority for the Town of Arlington, is hereby notifying you of its intention to hold a hearing to consider a report of underage sales on the above-referenced premises. If, following the hearing, the Board concludes that the alleged violations occurred, it may impose sanctions, including but not limited to modification, suspension, revocation, or cancellation of the above-referenced license. The hearing has been scheduled for: **March 30, 2015, at 7:15 pm in the Selectmen's Chambers.**

The alleged violations occurred on or about January 22, 2015, when the Arlington Police Department conducted an alcohol compliance check on the premises. A police report describing this operation is enclosed for your information. The facts detailed in this police report would establish a violation of G.L. c. 138, § 34, which prohibits delivery of alcoholic beverages to individuals under the age of 21, as well as 204 C.M.R. 2.05(2), which prohibits any illegality on licensed premises.

If you choose, you may be represented by legal counsel at the March 30, 2015 hearing. You may also submit testimony and exhibits for the Board's consideration. If you have any administrative questions, you may contact Board staff at the number listed above.

Very truly yours,

A handwritten signature in cursive script, reading "Marie A. Krepelka".

Marie A. Krepelka
Board Administrator

enc.

cc: Frederick Ryan, Chief of Police Services
Douglas Heim, Town Counsel
Christine Bongiorno, Director of Health & Human Services

**ARLINGTON POLICE
ARLINGTON, MA**INCIDENT # / REPORT #

15001756 / 1

OFFICER

PORCIELLO

RANK

INSP

REVIEW STATUS

APPROVED

INCIDENT #15001756 DATA

As Of 01/22/2015 20:35:24

BASIC INFORMATIONCASE TITLE

ALCOHOL COMPLIANCE CHECKS

LOCATION

112 MYSTIC ST

APT/UNIT #DATE/TIME REPORTED

01/22/2015 17:35:01

DATE/TIME OCCURRED

On or about 01/22/2015 17:35

INCIDENT TYPE/OFFENSE

ASSIST

[NO PERSONS]

[NO OFFENDERS]

[NO VEHICLES]

[NO PROPERTY]

OFFICER REPORT: 15001756 - 1 / PORCIELLO (INSP)DATE/TIME OF REPORT

01/22/2015 17:35:01

TYPE OF REPORT

INCIDENT

REVIEW STATUS

APPROVED

NARRATIVE

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I was then given 5 \$20.00 bills. The following are the results of our compliance checks.

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-At 6:50PM the operatives entered Fusion Taste located at 303 Broadway. They entered with a \$20.00 bill. They ordered 2 Bud Lights from an Asian woman with long dark hair who had an average build and appeared to be in her fifties. The woman was not wearing a name tag. The two operatives were served the Bud Lights but were not given a receipt. They exited Fusion Taste at 6:56PM with \$12.00.

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It should be noted that the servers were never witnessed by Inspectors and were reported to us by the operatives.

Once back at the station the 2 receipts from Mr. Sushi and Punjab were bagged as evidence. The evidence bag was then placed in evidence locker 2. The operatives were again breathalyzed by Officer Urquhart and again both blew 0.00.

The remaining \$74.88 was returned.

OFFICE OF THE BOARD OF SELECTMEN

STEVEN M. BYRNE, CHAIR
JOSEPH A. CURRO, VICE CHAIR
KEVIN F. GREELEY
DIANE M. MAHON
DANIEL J. DUNN



730 MASSACHUSETTS AVENUE
TELEPHONE
781-316-3020
781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 5, 2015

By Certified Mail, Return Receipt Requested
& By First Class Mail

Jaspal S. Pabla, Manager
Paramveer Corporation d/b/a Punjab Fine Indian Cuisine
485-87 Massachusetts Avenue
Arlington, MA 02474

Licensee: Paramveer Corp. d/b/a Punjab Fine Indian Cuisine
Licensed Premises: 485-87 Massachusetts Avenue, Arlington, MA.
License No.: 003000045
License Type: Restaurant Liquor License (Sale of Alcoholic Beverages to
be Consumed on the Premises)
Expiration Date: December 31, 2015

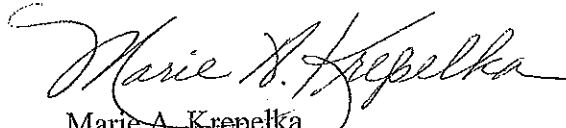
Dear Mr. Pabla:

In accordance with G.L. c. 138, §§ 23, 64, the Board of Selectmen, as the liquor licensing authority for the Town of Arlington, is hereby notifying you of its intention to hold a hearing to consider a report of underage sales on the above-referenced premises. If, following the hearing, the Board concludes that the alleged violations occurred, it may impose sanctions, including but not limited to modification, suspension, revocation, or cancellation of the above-referenced license. The hearing has been scheduled for: **March 30, 2015, at 7:15 pm in the Selectmen's Chambers.**

The alleged violations occurred on or about January 22, 2015, when the Arlington Police Department conducted an alcohol compliance check on the premises. A police report describing this operation is enclosed for your information. The facts detailed in this police report would establish a violation of G.L. c. 138, § 34, which prohibits delivery of alcoholic beverages to individuals under the age of 21, as well as 204 C.M.R. 2.05(2), which prohibits any illegality on licensed premises.

If you choose, you may be represented by legal counsel at the March 30, 2015 hearing. You may also submit testimony and exhibits for the Board's consideration. If you have any administrative questions, you may contact Board staff at the number listed above.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Marie A. Krepelka".

Marie A. Krepelka
Board Administrator

enc.

cc: Frederick Ryan, Chief of Police Services
Douglas Heim, Town Counsel
Christine Bongiorno, Director of Health & Human Services


**ARLINGTON POLICE
ARLINGTON, MA**
INCIDENT # / REPORT #
15001756 / 1

OFFICER
PORCIELLO

RANK
INSP

REVIEW STATUS
APPROVED

INCIDENT #15001756 DATA
As Of 01/22/2015 20:35:24
BASIC INFORMATION
CASE TITLE
ALCOHOL COMPLIANCE CHECKS

LOCATION
112 MYSTIC ST

APT/UNIT #
DATE/TIME REPORTED
01/22/2015 17:35:01

DATE/TIME OCCURRED
On or about 01/22/2015 17:35

INCIDENT TYPE/OFFENSE
ASSIST

[NO PERSONS]

[NO OFFENDERS]

[NO VEHICLES]

[NO PROPERTY]

OFFICER REPORT: 15001756 - 1 / PORCIELLO (INSP)
DATE/TIME OF REPORT
01/22/2015 17:35:01

TYPE OF REPORT
INCIDENT

REVIEW STATUS
APPROVED
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The remaining \$74.88 was returned.

OFFICE OF THE BOARD OF SELECTMEN

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TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 5, 2015

By Certified Mail, Return Receipt Requested
& By First Class Mail

Jason Zhen Ye, Manager
Y Plus Y, Inc. d/b/a Fusion Taste
303A-305 Broadway
Arlington, MA 02474

Licensee: Y Plus Y, Inc. d/b/a Fusion Taste
Licensed Premises: 303A-305 Broadway, Arlington, MA.
License No.: 003000030
License Type: Restaurant Liquor License (Sale of Alcoholic Beverages to be Consumed on the Premises)
Expiration Date: December 31, 2015


Dear Mr. Jason Zhen Ye:

In accordance with G.L. c. 138, §§ 23, 64, the Board of Selectmen, as the liquor licensing authority for the Town of Arlington, is hereby notifying you of its intention to hold a hearing to consider a report of underage sales on the above-referenced premises. If, following the hearing, the Board concludes that the alleged violations occurred, it may impose sanctions, including but not limited to modification, suspension, revocation, or cancellation of the above-referenced license. The hearing has been scheduled for: **March 30, 2015, at 7:15 pm in the Selectmen's Chambers.**

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If you choose, you may be represented by legal counsel at the March 30, 2015 hearing. You may also submit testimony and exhibits for the Board's consideration. If you have any administrative questions, you may contact Board staff at the number listed above.

Very truly yours,


Marie A. Krepelka
Board Administrator

enc.

cc: Frederick Ryan, Chief of Police Services
Douglas Heim, Town Counsel
Christine Bongiorno, Director of Health & Human Services

**ARLINGTON POLICE
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OFFICER

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TOWN OF ARLINGTON

Massachusetts
BOARD OF SELECTMEN

ALCOHOL LICENSES AND REGULATIONS



CERTIFICATION OF LICENSE APPLICANTS

All license applicants must sign a certification attesting that they have read and understood the Town policies, rules, and regulations relevant to their license.

The certification form is available at the Board of Selectmen's Office, and should be filed concurrently with any and all alcohol license applications.

TYPES OF LICENSES TO BE GRANTED IN ARLINGTON

	Page
• Alcohol Licenses for Restaurants (both all alcohol and wine and malt only restaurants).....	3
• All Alcohol Package Store Licenses.....	10
• Special (One-Day) Liquor License Policy.....	16
• Licenses for the Sale of Wine and Malt Beverages to be Consumed on the Premises in Theaters.....	18
• Sale of Wine at Farmers' Markets.....	24
• Caterer's License.....	26
• Club Licenses.....	27

Policies, Rules, and Regulations of Alcohol Licenses for Restaurants

Approved: 9/21/09

Revised: 9/10/12

Revised 1/12/15

I. Introduction

A. General Statement of Policy

The Town of Arlington is home to a wide array of high-quality eating establishments. As the local licensing authority for all sales of alcoholic beverages in the Town of Arlington, the Board of Selectmen ("Board") wishes to support the existing restaurant culture and to stimulate its further growth through the issuance of liquor licenses to restaurants as appropriate. The Board also intends that all service and consumption of alcohol in the Town of Arlington be done responsibly and in conformance with all legal requirements. In service of these goals, licenses will be issued under these Policies, Rules, and Regulations only to holders of Common Victualler Licenses and with the consistent expectation that licensees will conduct their establishments to the highest standards.

The Board intends that the issuance of liquor licenses will contribute to the Town's development in the following respects:

- (1) Bring to the Town quality restaurants and function rooms that provide fine dining opportunities in attractive surroundings;
- (2) Provide convenient and attractive parking options;
- (3) Improve the variety of shops in Arlington;
- (4) Promote increased foot traffic; and
- (5) Strengthen the Town's commercial tax base.

Consequently, the Board's consideration of license applications will include location, proximity of proposed premises to residential neighborhoods or business areas, traffic impact, parking availability, content of proposed menu and other aesthetic considerations, including design and layout of the proposed establishment's interior. All required notification of applications for new licenses, amended licenses, or license transfers must be provided to abutters and other affected parties in accordance with state law.

B. Conditions of Licensure: Compliance with Legal Requirements

Liquor licenses are subject to these Policies, Rules, and Regulations as well as relevant provisions of state law (Chapter 138 of the Massachusetts General Laws) and the rules, regulations, and other guidance of the Alcoholic Beverages Control Commission, as they may be from time to time amended. Further, the Board may attach such conditions and restrictions to each license it issues as it deems to be in the public interest. All licensees must be familiar with all requirements that apply to their licenses and must abide by those requirements in the operation of their establishments. In addition to legal provisions governing liquor licenses, licensees must also maintain compliance with all other requirements that apply to the operation of

licensed premises, including but not limited to the State Building Code, Fire Code, and Common Victualler License requirements as well as all applicable Town Bylaws and codes. Failure to comply with these or any other applicable provisions may lead to further conditions being placed upon the license or to license suspension or revocation.

II. Licensing

A. Types of Licenses, Seating Capacity

The Board is authorized to issue two types of licenses for the sale of alcohol to be consumed on the premises: (1) All-Alcohol; and (2) Wine and Malt Beverages. All-Alcohol Licenses may be issued for restaurants having a minimum seating capacity of 50. Wine and Malt Beverage Licenses may be issued for restaurants having a minimum seating capacity of 19. Holders of licenses to sell wine and malt beverages for consumption on the premises may not sell cordials or liqueurs unless and until the Town adopts local-option legislation to allow such sales. Seating capacity will be determined in accordance with the applicable provisions of the Massachusetts State Building Code. Unless specified otherwise, these Policies, Rules, and Regulations apply to both All-Alcohol and Wine and Malt Beverages licenses.

B. Application Process

1. Forms: Application for a license to sell alcoholic beverages for consumption on the premises requires submission of the following forms, in addition to any other information required by Chapter 138 of the General Laws or the rules, regulations, or policies of the Alcoholic Beverages Control Commission:

- (a) Alcoholic Beverages Control Commission application form;
- (b) Town of Arlington application form;
- (c) Criminal Offender Record Information ("CORI") release form; and
- (d) Department of Revenue release form.

The Board reserves the right to decline to process incomplete applications and to supplement or substitute required application materials at any time. Complete application information must be provided for each individual appearing on the application.

2. Fees:

- (a) filing fee: A non-refundable filing fee of \$100 must be submitted with each application;
- (b) license fees: If a license is granted, the following annual license fee shall be due at the time the license is issued and upon each renewal:
 - (i) All Alcohol License: \$3,000. By vote of the Board, this annual fee may be prorated for licenses granted after January 1, but in no event shall it be less than \$1,500.
 - (ii) Wine and Malt Beverage License: \$1,750. By vote of the Board, this annual fee may be prorated for licenses granted after January 1, but in no event shall it be less than \$600.

- (iii) Reductions: The Board may choose to reduce the annual license fee by \$400 for All-Alcohol Licenses and by \$200 for Wine and Malt Beverages Licenses for applicants who demonstrate successful completion of a certified server-training program.
- (c) the Board reserves the right to adjust any of the fees listed above from year to year.
- (d) form of payment: All payments must be made by certified or personal check.
- 3. Building and Site Plan: Every application must include the following information for the proposed licensed premises on a clear and accurate scale drawing;
 - (a) The net floor area and dimensions of the existing room or rooms requested to be licensed, including dining rooms, function rooms, and storage rooms;
 - (b) The location of any proposed service bars;
 - (c) Moveable or secured seats and tables;
 - (d) Entrance and exit doors, windows, and stairs; and
 - (e) All rooms that are not requested to be licensed, but are on the same floor as the room or rooms that are requested to be licensed, identified as to function (e.g., kitchen, coatroom, lobby).
- 4. Corporate Ownership and Interest:
 - (a) application materials: Every application made by a corporate entity shall state the full name and home address of the entity's president, treasurer, clerk, secretary, directors, investors, developers, managers, or any other person with a financial interest in the entity. The application shall be signed by a corporate officer duly authorized by a vote of the entity's board of directors or equivalent governing board. Copies of the following documents shall be filed with the application: the entity's certificate of incorporation, the vote authorizing the application, and the vote appointing the manager or other principal representative with respect to the license being requested.
 - (b) manager or principal representative: No corporate entity may receive a license to sell alcoholic beverages for consumption on the premises unless such entity shall have first appointed, by a vote of its board of directors or equivalent governing board, a manager or principal representative who is (1) a citizen of the United States; (2) vested with properly voted authority (evidenced by written delegation) over the premises to be licensed and the conduct of all business to be conducted thereon to the same extent that the licensee itself would be if a natural person resident in the Commonwealth; and (3) satisfactory to the Board.
 - (c) change in interest: Except as otherwise provided by law, no change in the stock ownership of a corporate entity shall be made after the license has been granted or renewed without the express written approval of the Board.
- 5. Advertising & Notification: The applicant is responsible for complying with state-law requirements for advertising and written notification, including but not limited to

requirements set forth in Sections 15A and 16C of Chapter 138 of the General Laws. The Board reserves the right to order additional notification.

6. Statements in Application Materials: Any false statement made in connection with an application shall be cause for denial of the license or for suspension, cancellation, or revocation of a license already granted.

C. License Duration, Renewals

Once issued, licenses are valid until December 31. The licensee is responsible for filing a renewal application at least 45 days before December 31. At the time of renewal, all previously submitted materials must be updated as appropriate and the required fee must be paid. The Board or its designee shall inspect the licensed premises prior to renewal and the complete inspection report must be filed with every renewal application. A renewal application that fails to meet any of these requirements will be treated as an original license application

III. Operation of Licensed Premises

A. Hours

Unless otherwise fixed for a particular license, licensees may sell alcoholic beverages for consumption on the premises between the hours of 11:00 a.m. and 12:00 midnight daily, provided that food service is available during all hours in which alcoholic beverages are offered for sale. All alcoholic beverages and containers must be removed from tables and service bars one-half hour after closing time. Patrons must be off the licensed premises one hour after closing time. The licensee, the licensee's manager or principal representative, and employees or subcontractors of the licensee may be on the licensed premises after closing only in accordance with Chapter 138 of the General Laws.

B. Supervision, Order, and Decorum

The licensee or licensee's manager or principal representative shall be present at the licensed premises at all times during which alcoholic beverages are offered for sale. The licensee may designate and authorize some other person to act as the responsible manager and be present at the licensed premises while alcoholic beverages are offered for sale, provided that this person shall first have been identified to, and approved by, the Board. The designated manager or representative described in this section shall be available to the Board or its designee at all times during which alcoholic beverages may be sold on the licensed premises. The full name, current residential address, and current business and home telephone numbers of all designated managers or representatives described in this section shall be on file with the Board. Failure to provide this information and keep it current shall alone be sufficient cause for suspension or revocation of the license.

The manager or representative on site shall at all times maintain order and decorum on the premises and in the area immediately surrounding the premises. These areas must be kept clean, neat, and sanitary at all times. The manager or representative on site shall cooperate in all ways with Town officials, including but not limited to representatives of the Board, the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

C. Inspections

At any time, licensed premises are subject to inspection by the Board or its designee, including but not limited to the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

D. Physical Plant

The location of service bars shall not be changed without the submission of an amended floor plan to the Board and the Board's written approval. No premises will be licensed unless adequate and appropriate toilet facilities are available to patrons. No amusement devices such as electronic games shall be permitted on any licensed premises. All licensed establishments shall have suitable appliances to maintain water temperature consistently at 180° so that eating, drinking, cooking, and serving utensils are thoroughly cleaned and sanitized. Licensed premises shall not allow in windows or on outside walls the posting of advertisements or signs carrying the brand name of any alcoholic beverages. Signage on the inside of licensed premises is subject to Board approval.

E. Service and Consumption of Alcoholic Beverages and Food

1. Service of Alcoholic Beverages: Alcoholic beverages may be served only by wait staff of the licensed establishment. No pitchers of beer may be served. No alcoholic beverages may be served over a counter except a counter with fixed seating at which food service is also available. No alcoholic beverages may be served in the same area or over the same counter at which take-out food is made available for delivery or pick-up.

2. Service of Food: Food service must be available in all areas in which alcoholic beverages are served. No more than two alcoholic beverages per person may be served without food. After two alcoholic beverages have been served and consumed, a third such beverage may be served only with the delivery of food. Food must be served on solid, reusable dinnerware with silverware. Paper plates, disposable glasses, or plastic cutlery are not permitted.

3. Consumption of Alcoholic Beverages on the Premises: Only alcoholic beverages sold on the licensed premises shall be consumed on the premises: no patron shall be permitted to bring alcoholic beverages purchased off-site onto any licensed premises for consumption. All alcoholic beverages purchased on the premises shall be consumed on the premises, except unfinished bottles of wine re-sealed in accordance with Chapter 138, Section 12, of the General Laws and regulations of the Alcohol Beverages Control Commission. Even if the licensee's Common Victualler permit allows for outdoor seating, alcoholic beverages may be served in an outdoor space only if: (1) the description of the licensed premises expressly includes such outdoor space; (2) the outdoor space is surrounded by a suitable barrier or other physical element that maintains separation between the licensed premises and the general public; (3) the outdoor space is privately owned, or the outdoor space is on a public way and the owner of the licensed premises: a) obtains permission for such use from the Board, b) agrees to indemnify and hold harmless the Town of Arlington and all of its officers, officials, and assigns from any and all claims connected with their use of public ways areas described in the licensed premises, c) presents proof of insurance for its use of same, and d) complies with all other town, state, and federal laws including maintaining Americans with Disabilities Act (ADA) compliance; and (4) the Board is satisfied that neither the safety, nor the enjoyment of public ways shall be unreasonably compromised by issuance of a license permitting outdoor service of alcohol on a public way. All outdoor food and alcohol service shall conclude before 10:00 p.m. Thursday through Sunday, and 11:00 p.m. Friday and Saturday, unless otherwise affixed on a particular license as approved by the Board.

IV. Status of License

A. Exercise of License: Once a license is granted under these Policies, Rules, and Regulations, the licensee shall commence construction or alteration of the licensed premises within forty-five days and shall be in full operation within four months, unless a longer period is authorized by the Board. Thereafter, the licensee shall operate the licensed premises continuously in accordance with the terms of the license.

Closing of the licensed premises for seven consecutive days or for any ten days during the calendar year (other than outside the establishment's normal business hours) without prior written approval of the Board shall be considered abandonment of the license and sufficient grounds for revocation.

B. Violations

1. Generally: Any violation of Chapter 138 of the General Laws pertaining to licenses for the sale of alcoholic beverages to be consumed on the premises; any violation of the rules, regulations, or policies of the Alcoholic Beverages Control Commission relative to the sale of alcoholic beverages to be consumed on the premises; any violation of these Policies, Rules, and Regulations; or any violation of the conditions attached to any license granted under these Policies, Rules, and Regulations may result in additional conditions being placed on the license or in the cancellation, suspension, or revocation of the license following a hearing before the Board. Any action taken under this section shall be commenced by written notification to the licensee at the address on file with the Board. A hearing held under this section shall commence within two weeks or as soon as reasonably practicable thereafter following written notification. The Board or its agents may seize a license immediately if, in the Board's discretion, public health or safety warrants such a seizure and the penalty must begin on the same day of the week as the violation occurred. If a license is seized immediately, a hearing will be commenced within two weeks of the seizure, unless the licensee assents in writing to a longer time.

2. Service to Underage Individuals: If, after notice and a hearing, the Board or its designee concludes that an under-aged person was served alcohol at a licensed establishment, the Board shall suspend the license as provided below, or for such other time as the Board in its discretion shall choose.

First offense:	3-5 days suspension
Second offense:	6-10 days suspension
Third offense:	10-15 days suspension or revocation

This section shall not impair the Board's discretion to impose some other type of penalty in place of license suspension if the Board concludes that another penalty is appropriate. Such other penalties may include (but are not limited to) rolling back hours of operation, fixing other conditions on the license, or suspending or fixing conditions on the licensee's other licenses, such as Common Victualler or entertainment.

In fixing the penalty for sales to underaged individuals, the Board may consider the following factors:

- (a) licensee's policies and procedures and application of those policies and procedures to guard against service to underaged individuals;
- (b) severity and type of offense;
- (c) efforts made to identify purchasers of alcohol;
- (d) appearance of the underaged purchaser of alcohol;
- (e) quality of the evidence of a violation;
- (f) circumstances of the case; and
- (g) number and nature of licensee's previous violations.

C. Transfers

Licenses granted under these Policies, Rules, and Regulations may not be transferred or assigned except with the approval of the Board and in accordance with Chapter 138 of the General Laws and rules, regulations, and policies of the Alcoholic Beverages Control Commission.

Policies, Rules, and Regulations for All Alcohol Package Store Licenses

Approved: 1/12/15

I. Introduction

A. General Statement of Policy

The Town of Arlington is home to a wide array of retail establishments. As the local licensing authority for all sales of alcoholic beverages in the Town of Arlington, the Board of Selectmen ("Board") wishes to support the existing business climate and to stimulate its further growth through the issuance of Package Store Licenses as appropriate. The Board also intends that all service and consumption of alcohol in the Town of Arlington be done responsibly and in conformance with all legal requirements. In service of these goals, licenses will be issued under these Policies, Rules, and Regulations only to holders of package store licenses with the consistent expectation that licensees will conduct their establishments to the highest standards.

The Board intends that the issuance of package store licenses will contribute to the Town's development in the following respects:

- (1) Bring to the Town quality shops that provide retail alcohol products in attractive surroundings;
- (2) Provide convenient and attractive parking options;
- (3) Improve the variety of shops in Arlington;
- (4) Promote increased foot traffic; and
- (5) Strengthen the Town's commercial tax base.

Consequently, the Board's consideration of license applications will include number of existing dispensaries in the community, views of the inhabitants, traffic, noise, size of business operation intended, type of business operation intended, and reputation of applicant. All required notification of applications for new licenses, amended licenses, or license transfers must be provided to abutters and other affected parties in accordance with state law.

B. Conditions of Licensure: Compliance with Legal Requirements

Package store licenses are subject to these Policies, Rules, and Regulations as well as relevant provisions of state law (Chapter 138 of the Massachusetts General Laws) and the rules, regulations, and other guidance of the Alcoholic Beverages Control Commission, as they may be from time to time amended. Further, the Board may attach such conditions and restrictions to each license it issues as it deems to be in the public interest. All licensees must be familiar with all requirements that apply to their licenses and must abide by those requirements in the operation of their establishments. In addition to legal provisions governing liquor licenses, licensees must also maintain compliance with all other requirements that apply to the operation of licensed premises, including but not limited to the State Building Code, Fire Code, and

Sanitary Code requirements as well as all applicable Town Bylaws and codes. Failure to comply with these or any other applicable provisions may lead to further conditions being placed upon the license or to license suspension or revocation. *All taxes and charges owed the Town must be paid on a current basis. Failure to comply with any of these laws and regulations shall be sufficient cause for revocation, suspension, or modification of license.*

II. Licensing

A. Application Process

1. Forms: Application for a license for the sale at retail of alcoholic beverages not to be drunk on the premise where sold requires submission of the following forms, in addition to any other information required by Chapter 138 of the General Laws or the rules, regulations, or policies of the Alcoholic Beverages Control Commission:

- (a) Alcoholic Beverages Control Commission application form;
- (b) Town of Arlington application form;
- (c) Criminal Offender Record Information ("CORI") release form; and
- (d) Department of Revenue release form.

The Board reserves the right to decline to process incomplete applications and to supplement or substitute required application materials at any time. Complete application information must be provided for each individual appearing on the application. *Once denied, applications may not be submitted for (12) months.*

2. Fees:

- (a) filing fee: A non-refundable filing fee of \$250 must be submitted with each application;
- (b) license fees: If a license is granted, the following annual license fee of \$2,500 shall be due at the time the license is issued and upon each renewal.
- (c) The Board reserves the right to adjust any of the fees listed above from year to year.
- (d) form of payment: All payments must be made by certified or personal check.

3. Building and Site Plan: Every application must include the following information for the proposed licensed premises on a clear and accurate scale drawing;

- (a) The net floor area and dimensions of the existing room or rooms requested to be licensed, including storage rooms; and
- (b) Entrance and exit doors, windows, and stairs.

4. Corporate Ownership and Interest:

- (a) application materials: Every application made by a corporate entity shall state the full name and home address of the entity's president, treasurer, clerk, secretary, directors, investors, developers, managers, or any other person with a financial

interest in the entity. The application shall be signed by a corporate officer duly authorized by a vote of the entity's board of directors or equivalent governing board. Copies of the following documents shall be filed with the application: the entity's certificate of incorporation, the vote authorizing the application, and the vote appointing the manager or other principal representative with respect to the license being requested. *Any change in corporate name or status or any change in trade name (DBA) shall require the prior approval of the Board.*

- (b) manager or principal representative: No corporate entity may receive a license to sell alcoholic beverages for consumption on the premises unless such entity shall have first appointed, by a vote of its board of directors or equivalent governing board, a manager or principal representative who is (1) a citizen of the United States; (2) vested with properly voted authority (evidenced by written delegation) over the premises to be licensed and the conduct of all business to be conducted thereon to the same extent that the licensee itself would be if a natural person resident in the Commonwealth; and (3) satisfactory to the Board. *The licensee shall not change managers, change corporate officers without first obtaining the approval of the Board. No person may have a direct or indirect beneficial interest in a license without first obtaining the approval of the Board.*
- (c) change in interest: Except as otherwise provided by law, no change in the stock ownership of a corporate entity shall be made after the license has been granted or renewed without the express written approval of the Board.

5. Advertising & Notification: The applicant is responsible for complying with state-law requirements for advertising and written notification, including but not limited to requirements set forth in Sections 15A and 16C of Chapter 138 of the General Laws. The Board reserves the right to order additional notification.

6. Statements in Application Materials: Any false statement made in connection with an application shall be cause for denial of the license or for suspension, cancellation, or revocation of a license already granted.

B. License Duration, Renewals

Once issued, licenses are valid until December 31. The licensee is responsible for filing a renewal application at least 45 days before December 31. At the time of renewal, all previously submitted materials must be updated as appropriate and the required fee must be paid. The Board or its designee shall inspect the licensed premises prior to renewal and the complete inspection report must be filed with every renewal application. A renewal application that fails to meet any of these requirements will be treated as an original license application.

Any licensee intending to close a place of business, whether on a temporary or permanent basis, must notify the Board in writing before such closing stating the reason and length of such closing. Failure to provide such notice may result in the revocation of the license.

The licensee shall immediately notify, in writing, the Board of any proceedings brought by or against the licensee under the bankruptcy laws or of any other court proceedings which may affect the status of the license.

III. Operation of Licensed Premises

A. Hours

Unless otherwise fixed for a particular license, licensees may sell alcoholic beverages not for consumption on the premises between the hours of 8:00 a.m. and 12:00/midnight Monday through Saturday and between the hours of 10:00 A.M. and 12:00 midnight Sunday. The licensee, the licensee's manager or principal representative, and employees or subcontractors of the licensee may be on the licensed premises after closing only in accordance with Chapter 138 of the General Laws.

No sale or delivery of alcoholic beverages shall be made except during the legal hours of sale. Alcoholic beverages shall be transported or delivered for sale only upon orders actually received at the licensed business prior to the shipment thereof and must comply with the following. Package store licensees are required to keep a written record of the name and address of every person to whom a delivery is made outside of the premises. Additionally, the record must include the information as to the amount of alcoholic beverages that were delivered, the date and time of delivery, and the signature of the person receiving the delivery. If such signature is illegible, the licensee is required to have the patron print his or her name under said signature. Such records must be maintained for a period of not less than one year from the last entry therein and must be available to the Licensing Board and its agents for inspection at any time in a form suitable for easy inspection.

B. Supervision, Order, and Decorum

The licensee or licensee's manager or principal representative shall be present at the licensed premises at all times during which the sale of alcoholic beverages not for consumption on premise are sold. The licensee may designate and authorize some other person to act as the responsible manager and be present at the licensed premises while alcoholic beverages are offered for sale, provided that this person shall first have been identified to, and approved by, the Board. The designated manager or representative described in this section shall be available to the Board or its designee at all times during which alcoholic beverages may be sold on the licensed premises. The full name, current residential address, and current business and home telephone numbers of all designated managers or representatives described in this section shall be on file with the Board. Failure to provide this information and keep it current shall alone be sufficient cause for suspension or revocation of the license.

The manager or representative on site shall at all times maintain order and decorum on the premises and in the area immediately surrounding the premises. These areas must be kept clean, neat, and sanitary at all times. The manager or representative on site shall cooperate in all ways with Town officials, including but not limited to representatives of the Board, the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

C. Inspections

At any time, licensed premises are subject to inspection by the Board or its designee, including but not limited to the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

D. Physical Plant

The store layout shall not be changed without the submission of an amended floor plan to the Board and the Board's written approval. No amusement devices such as electronic games shall be permitted on any licensed premises. Licensed premises shall not allow in more than one-third of windows or on outside walls the posting of advertisements or signs carrying the brand name of any alcoholic beverages. Signage on the inside of licensed premises is subject to Board approval.

E. Service and Employee Training

An up-to-date list of all employees shall be available on the premises at all times for review by authorized agents of the Board. Any employee making a sale of alcoholic beverages must be at least twenty-one (21) years of age and provide a C.O.R.I. report. The Board in its sole discretion shall make judgments as to whether any violation warrants disapproval.

An employee education and training program on the proper procedures for verifying that patrons are at least 21 years of age and not intoxicated shall be provided by the licensee. A written description of such program, along with a written policy outlining the employees' responsibilities and the disciplinary measures which will be taken against any employee for violating said policy, shall be filed with the Board and be maintained on the premises at all times. A signed certification of each employee, indicating that the employee has received the described training and has reviewed and understands the written policy describing his or her responsibilities and the disciplinary action which will be taken for violations, shall be maintained on the premises at all times. Copies of all such documents and certifications shall be available to the licensing authority, or any authorized agent thereof, upon demand.

No alcoholic beverages shall be sold to anyone under twenty-one (21) years of age or any intoxicated person. Signage indicating, "If you look under 30 years of age, you will be carded" shall be conspicuously displayed. Only an original driver's license with photograph or a Massachusetts Liquor Purchase identification Card shall be accepted as proof of age.

F. Sampling

No licensee, manager, server, agent, or employee shall knowingly permit such consumption of alcoholic beverages within or upon the retail package store licensed premises, or upon any area under the direction and control of the licensee, except for "sample tasting" as set forth in G.L. c. 138 sec. 15, including limitations on samples set forth therein.

IV. Status of License

A. Exercise of License

Once a license is granted under these Policies, Rules, and Regulations, the licensee shall commence construction or alteration of the licensed premises within forty-five days and shall be in full operation within four months, unless a longer period is authorized by the Board. Thereafter, the licensee shall operate the licensed premises continuously in accordance with the terms of the license. Closing of the licensed premises for seven consecutive days or for any ten days during the calendar year (other than outside the establishment's normal business hours) without prior written approval of the Board shall be considered abandonment of the license and sufficient grounds for revocation.

All licenses and permits issued by the Town shall be displayed on the premises in a conspicuous place where the public has access and may read.

B. Violations

1. Generally: Any violation of Chapter 138 of the General Laws pertaining to licenses for the sale of alcoholic beverages to be consumed on the premises; any violation of the rules, regulations, or policies of the Alcoholic Beverages Control Commission relative to the sale of alcoholic beverages not to be consumed on the premises; any violation of these Policies, Rules, and Regulations; or any violation of the conditions attached to any license granted under these Policies, Rules, and Regulations may result in

additional conditions being placed on the license or in the cancellation, suspension, or revocation of the license following a hearing before the Board. Any action taken under this section shall be commenced by written notification to the licensee at the address on file with the Board. A hearing held under this section shall commence within two weeks or as soon as reasonably practicable thereafter following written notification. The Board or its agents may seize a license immediately if, in the Board's discretion, public health or safety warrants such a seizure and the penalty must begin on the same day of the week as the violation occurred. If a license is seized immediately, a hearing will be commenced within two weeks of the seizure, unless the licensee assents in writing to a longer time.

2. Service to Underage Individuals: If, after notice and a hearing, the Board or its designee concludes that an under-aged person was sold alcohol at a licensed establishment, the Board shall suspend the license as provided below, or for such other time as the Board in its discretion shall choose.

First offense:	3-5 days suspension
Second offense:	6-10 days suspension
Third offense:	10-15 days suspension or revocation

This section shall not impair the Board's discretion to impose some other type of penalty in place of license suspension if the Board concludes that another penalty is appropriate. Such other penalties may include (but are not limited to) rolling back hours of operation, fixing other conditions on the license.

In fixing the penalty for sales to underage individuals, the Board may consider the following factors:

- (a) licensee's policies and procedures and application of those policies and procedures to guard against service to underage individuals;
- (b) severity and type of offense;
- (c) efforts made to identify purchasers of alcohol;
- (d) appearance of the underage purchaser of alcohol;
- (e) quality of the evidence of a violation;
- (f) circumstances of the case; and
- (g) number and nature of licensee's previous violations.

B. Transfers

Licenses granted under these Policies, Rules, and Regulations may not be transferred or assigned except with the approval of the Board and in accordance with Chapter 138 of the General Laws and rules, regulations, and policies of the Alcoholic Beverages Control Commission. *Assignment of stock in incorporated licensed places for the purpose of safeguarding the assignee on loans, etc., gives no right to such assignee to conduct the business of the licensee; therefore, licensees must notify the Board immediately when the assignee forecloses under such assignment of stock.*

Special (One-Day) Liquor License Policy

Approved: 6/7/10

Revised: 4/12/12

Revised: 1/12/15

1. A one-day “special” license for the sale of **wine & malt only beverages** may be granted to the responsible manager of any indoor or outdoor (see #2) activity or enterprise.
A one-day “special” license for the sale of **all alcoholic beverages** may be granted to the responsible manager of any non-profit organization conducting any indoor or outdoor (see #2) activity or enterprise.
2. Sale and consumption are limited to inside of the premises, with the exception of Town Hall and Whittemore Robbins House events, which shall permit sale and consumption in designated areas of the Town Hall Garden and Whittemore Robbins Gardens respectively. If allowed by Board vote, outdoor sale and consumption may occur only in a defined outside area away from public ways.
3. Consistent with Section 14 of Massachusetts General Laws Chapter 138, a responsible manager and alternate should be named by the organization, one of whom shall be on the premises at all times during the day(s) in question. The responsible manager must be at least 21 years of age. The name(s) and 24-hour contact information shall be on file with the Office of the Board of Selectmen and Police Services Division.
4. The Local Licensing Authority (Board of Selectmen) may impose reasonable conditions and limitations on any special license that is granted, including but not limited to the hours of operation and the presence of a police detail(s).
5. **Security.** The applicant must present a security plan to the Arlington Police Department before filing this application. This security plan must include provisions for:
 - crowd control,
 - dealing with unruly patrons,
 - emergency evacuations,
 - traffic/parking considerations, and
 - controlling access to alcohol by underaged persons.

Unless circumstances warrant otherwise, the security plan will require one police officer for an event that 150 people are expected to attend and two officers for an event that 300 or more people are expected to attend. *The Chief of Police, Operations Commander, or their designee (see attached Town Hall Events-Bar Requirements Sheet) must sign off on this application as to the security plan for the event **before** the application is filed with the Board of Selectmen.* Moreover, applicants must demonstrate that people who will be serving alcoholic beverages are at least 21 years of age and that at least one person who will be staffing each point of service of alcoholic beverages has certification in TIPS or comparable safety training.

6. Unless otherwise voted by the Board of Selectmen, each special license shall cover a single activity or enterprise.

- a. A special license generally is granted for a single day only. The special license may be granted for more than one day at a time **only** if the activity or enterprise spans more than one day.
 - b. The fee for a special license shall be charged on a per-day basis.
- 7. The Board reserves the right to decline to consider any application filed later than 21 days before the proposed event. The Board may require the filing of references by the applicant at its discretion.
- 8. Organizers of any event requiring a one-day "special" liquor license must comply with state statutory and regulatory requirements, which can be found on the website of the Alcoholic Beverages Control Commission: WWW.MASS.GOV/ABCC. See Chapter 138, Section 14, of the Massachusetts General Laws and 204 C.M.R. 7.00. If necessary, organizers should consult private counsel to ensure compliance with these legal requirements.

Rules and Regulations for Licenses for the Sale of Wine and Malt Beverages to be Consumed on the Premises in the Theaters

Approved: 5/21/12

Revised: 1/12/15

I. GENERAL CONDITIONS

A. Conditions of Licensure: Compliance with Legal Requirements

Licenses for the sale of wine and malt beverages are subject to these Rules and Regulations as well as relevant provisions of state law (Chapter 138 of the Massachusetts General Laws) and the rules, regulations, and other guidance of the Alcoholic Beverages Control Commission, as they may be from time to time amended. Further, the Board may attach such conditions and restrictions to each license it issues as it deems to be in the public interest. All licensees must be familiar with all requirements that apply to their licenses and must abide by those requirements in the operation of their establishments. In addition to legal provisions governing liquor licenses, licensees must also maintain compliance with all other requirements that apply to the operation of licensed premises, including but not limited to the State Building Code, Fire Code, and Common Victualler and/or Food Vendor License requirements as well as all applicable Town Bylaws and codes. Failure to comply with these or any other applicable provisions may lead to further conditions being placed upon the license or to license suspension or revocation.

B. Application Process

1. **Forms:** Application for a license to sell alcoholic beverages for consumption on the premises requires submission of the following forms, in addition to any other information required by Chapter 138 of the General Laws or the rules, regulations, or policies of the Alcoholic Beverages Control Commission:

- (a) Alcoholic Beverages Control Commission application form;
- (b) Town of Arlington application form;
- (c) Criminal Offender Record Information ("CORI") release form; and
- (d) Department of Revenue release form.

The Board reserves the right to decline to process incomplete applications and to supplement or substitute required application materials at any time. Complete application information must be provided for each individual appearing on the application.

2. Fees:

- (a) **filing fee:** A non-refundable filing fee of \$100 must be submitted with each application;

- (b) license fees: The amount of annual license fees shall be tiered based on the number of days per year that the applicant expects to be open, as follows:

up to 50 days	\$ 750.00
50-99 days	\$1,250.00
100 days or more	\$1,750.00

For purposes of calculating the applicable annual license fee, any portion of a day or evening during which the applicant's establishment is open to the public for a movie showing, live performance, or other entertainment will be counted as one day.

By vote of the Board, this annual fee may be prorated for licenses granted after January 1.

The Board will reduce the annual license fee by \$200 for applicants who demonstrate successful completion of a certified server-training program.

- (c) The Board reserves the right to adjust any of the fees listed above from year to year.

- (d) form of payment: All payments must be made by certified or personal check.

3. Building and Site Plan: Every application must include the following information for the proposed licensed premises on a clear and accurate scale drawing;

- (a) The net floor area and dimensions of the existing room or rooms requested to be licensed, including dining rooms, function rooms, and storage rooms;
- (b) The location of any proposed service bars;
- (c) Moveable or secured seats and tables;
- (d) Entrance and exit doors, windows, and stairs; and
- (e) All rooms that are not requested to be licensed, but are on the same floor as the room or rooms that are requested to be licensed, identified as to function (e.g., kitchen, coatroom, lobby).

4. Corporate Ownership and Interest:

- (a) application materials: Every application made by a corporate entity shall state the full name and home address of the entity's president, treasurer, clerk, secretary, directors, investors, developers, managers, or any other person with a financial interest in the entity. The application shall be signed by a corporate officer duly authorized by a vote of the entity's board of directors or equivalent governing board. Copies of the following documents shall be filed with the application: the entity's certificate of incorporation, the vote authorizing the application, and the vote

appointing the manager or other principal representative with respect to the license being requested.

- (b) manager or principal representative: No corporate entity may receive a license to sell alcoholic beverages for consumption on the premises unless such entity shall have first appointed, by a vote of its board of directors or equivalent governing board, a manager or principal representative who is (1) a citizen of the United States; (2) vested with properly voted authority (evidenced by written delegation) over the premises to be licensed and the conduct of all business to be conducted thereon to the same extent that the licensee itself would be if a natural person resident in the Commonwealth; and (3) satisfactory to the Board.
- (c) change in interest: Except as otherwise provided by law, no change in the stock ownership of a corporate entity shall be made after the license has been granted or renewed without the express written approval of the Board.

5. Advertising & Notification: The applicant is responsible for complying with state-law requirements for advertising and written notification, including but not limited to requirements set forth in Sections 15A and 16C of Chapter 138 of the General Laws. The Board reserves the right to order additional notification.

6. Statements in Application Materials: Any false statement made in connection with an application shall be cause for denial of the license or for suspension, cancellation, or revocation of a license already granted.

C. License Duration, Renewals

Once issued, licenses are valid until December 31. The licensee is responsible for filing a renewal application at least 45 days before December 31. At the time of renewal, all previously submitted materials must be updated as appropriate and the required fee must be paid. The Board or its designee shall inspect the licensed premises prior to renewal and the complete inspection report must be filed with every renewal application. A renewal application that fails to meet any of these requirements will be treated as an original license application.

D. Supervision, Order, and Decorum

The licensee or licensee's manager or principal representative shall be present at the licensed premises at all times during which alcoholic beverages are offered for sale. The licensee may designate and authorize some other person to act as the responsible manager and be present at the licensed premises while alcoholic beverages are offered for sale, provided that this person shall first have been identified to, and approved by, the Board. The designated manager or representative described in this section shall be available to the Board or its designee at all times during which alcoholic beverages may be sold on the licensed premises. The full name, current residential address, and current business and home telephone numbers of all designated managers or representatives described in this section shall be on file with the Board. Failure to provide this information and keep it current shall alone be sufficient cause for suspension or revocation of the license.

The manager or representative on site shall at all times maintain order and decorum on the premises and in the area immediately surrounding the premises. These areas must be kept clean, neat, and sanitary at

all times. The manager or representative on site shall cooperate in all ways with Town officials, including but not limited to representatives of the Board, the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

E. Inspections

At any time, licensed premises are subject to inspection by the Board or its designee, including but not limited to the Police Department, the Fire Department, Inspectional Services, and the Board of Health.

F. Physical Plant

The location of service bars shall not be changed without the submission of an amended floor plan to the Board and the Board's written approval. No premises will be licensed unless adequate and appropriate toilet facilities are available to patrons. All licensed establishments shall have suitable appliances to maintain water temperature consistently at 180° so that eating, drinking, cooking, and serving utensils are thoroughly cleaned and sanitized. Licensed premises shall not allow in windows or on outside walls the posting of advertisements or signs carrying the brand name of any alcoholic beverages. Signage on the inside of licensed premises is subject to Board approval.

G. Violations

1. Generally: Any violation of Chapter 138 of the General Laws pertaining to licenses for the sale of alcoholic beverages to be consumed on the premises; any violation of the rules, regulations, or policies of the Alcoholic Beverages Control Commission relative to the sale of alcoholic beverages to be consumed on the premises; any violation of these Rules, and Regulations; or any violation of the conditions attached to any license granted under these Rules and Regulations may result in additional conditions being placed on the license or in the cancellation, suspension, or revocation of the license following a hearing before the Board. Any action taken under this section shall be commenced by written notification to the licensee at the address on file with the Board. A hearing held under this section shall commence within two weeks or as soon as reasonably practicable thereafter following written notification. The Board or its agents may seize a license immediately if, in the Board's discretion, public health or safety warrants such a seizure and the penalty must begin on the same day of the week as the violation occurred. If a license is seized immediately, a hearing will be commenced within two weeks of the seizure, unless the licensee assents in writing to a longer time.

2. Service to Underage Individuals: If, after notice and a hearing, the Board or its designee concludes that an under-aged person was served alcohol at a licensed establishment, the Board shall suspend the license as provided below, or for such other time as the Board in its discretion shall choose.

First offense:	3-5 days suspension
Second offense:	6-10 days suspension
Third offense:	10-15 days suspension or revocation

This section shall not impair the Board's discretion to impose some other type of penalty in place of license suspension if the Board concludes that another penalty is appropriate. Such other penalties may include (but are not limited to) rolling back hours of operation, fixing other conditions on the license, or suspending or fixing conditions on the licensee's other licenses, such as Common Victualler or entertainment.

In fixing the penalty for sales to underaged individuals, the Board may consider the following factors:

- (a) licensee's policies and procedures and application of those policies and procedures to guard against service to underaged individuals;
- (b) severity and type of offense;
- (c) efforts made to identify purchasers of alcohol;
- (d) appearance of the underaged purchaser of alcohol;
- (e) quality of the evidence of a violation;
- (f) circumstances of the case; and
- (g) number and nature of licensee's previous violations.

3. Compliance Checks: Theaters holding licenses for the sale of wine and malt beverages shall be subject to alcohol compliance checks to the extent permitted by law and to the same extent as any other licensee for the sale of alcoholic beverages to be consumed on or off the premises within the Town.

H. Transfers

Licenses granted under these Rules and Regulations may not be transferred or assigned except with the approval of the Board and in accordance with Chapter 138 of the General Laws and rules, regulations, and policies of the Alcoholic Beverages Control Commission.

II. SPECIAL CONDITIONS FOR THEATERS

A. Theater Venues Eligible for License to Sell Wine and Malt Beverages

A license for the sale of wine and malt beverages to be consumed on the premises may be granted to any privately operated enclosed entertainment facility with a minimum seating capacity of 100 that is used primarily for the presentation of motion pictures or dramatic, comedic, or musical performances.

B. Hours of Sale

Sales of wine and malt beverages shall be permitted during regular hours of operation of the theater.

C. Who May Purchase

Wine and malt beverages may be sold only to patrons holding tickets for a movie, performance, or other entertainment to be presented in the licensed establishment on the date and at the approximate time of the sale.

D. Limit on Sales

No patron may be served more than two wine or malt beverages per day. No more than two wine or malt beverages may be purchased by a patron at one time. No pitchers of beer or bottles or carafes of wine shall be served. Only alcoholic beverages sold on the licensed premises shall be consumed on the premises: no patron shall be permitted to bring alcoholic beverages purchased off-site onto any licensed premises for consumption. All alcoholic beverages purchased on the premises shall be consumed on the premises.

E. Place of Sales, Consumption

Wine and malt beverages may be sold only from one dedicated counter area. Once purchased, wine and malt beverages may be brought into any area of the theater in which food and non-alcoholic beverages are allowed to be consumed. Alcoholic beverages may not be served outside the licensed premises.

Sale of Wine at Farmers' Markets

Approved: 1/12/15

In 2010, the state authorized the sale of sealed bottles of wine by licensed farmer-wineries for consumption off the premises at "agricultural events" designated by the state Department of Agricultural Resources through Chapter 138 Section 15F.

Section 15F. Notwithstanding any other provision of chapter 138, in any city or town wherein the granting of licenses to sell wine is authorized under this chapter, the local licensing authority may issue to an applicant authorized to operate a farmer-winery under section 19B or in any other state, a special license for the sale of wine produced by or for the licensee in sealed containers for off-premise consumption at an indoor or outdoor agricultural event. All sales of wine shall be conducted by an agent, representative, or solicitor of the licensee to customers who are at least 21 years of age. A licensee under this section may provide, without charge, samples of wine to prospective customers at an indoor or outdoor agricultural event. All samples of wine shall be served by an agent, representative, or solicitor of the licensee to individuals who are at least 21 years of age and all samples shall be consumed in the presence of such agent, representative, or solicitor of the licensee; provided, however, that no sample shall exceed one (1) ounce of wine and no more than 5 samples shall be served to an individual prospective customer. For the purposes of this section, the term "agricultural event" shall be limited to those events certified by the department of agricultural resources as set forth in this section.

An applicant for a special license under this section shall first submit a plan to the department of agricultural resources that shall demonstrate that the event is an agricultural event. The plan shall include a description of the event, the date, time and location of the event, a copy of the operational guidelines or rules for the event, written approval that the prospective licensee has been approved as a vendor at the event, including the name and contact information of the on-site manager, and a plan depicting the premises and the specific location where the license will be exercised.

Upon review of the plan, the department may certify that the event is an agricultural event; provided, however, that in making that determination, the department shall consider the following factors: (i) operation as a farmers' market or agricultural fair approved or inspected by the department; (ii) frequency and regularity of the event, including dates, times and locations; (iii) number of vendors; (iv) terms of vendor agreements; (v) presence of an on-site manager; (vi) training of the on-site manager; (vii) operational guidelines or rules, which shall include vendor eligibility and produce source; (viii) focus of event on local agricultural products grown or produced within the market area; (ix) types of shows or exhibits, including those which are described in clause (f) of the first paragraph of section 2 of chapter 128; and (xi) sponsorship or operation by an agricultural or horticultural society organized under the laws of the commonwealth, or by a local grange organization and/or association whose primary purpose is the promotion of agriculture and its allied industries. The department of agricultural resources may promulgate rules and regulations necessary for the operation, oversight, approval, and inspection of agricultural events under this section.

An applicant for a license under this section shall file with the local licensing authority along with its application proof of certification from the department of agricultural resources that the event is an agricultural event. A special license under this section shall designate the specific premises, and dates and times covered. A special license may be granted for an indoor or outdoor agricultural event which takes place on multiple dates and/or times during a single calendar year but no special license shall be granted for an agricultural event that will not take place within 1 calendar year. The special license shall be displayed conspicuously by the licensee at the licensed premises. A copy of a special license granted by the local licensing authority shall be submitted by the authority to the commission at least 7 days prior to the date the agricultural event is first scheduled to begin. The local licensing authority may charge a fee for each special license granted, but such fee shall not exceed fifty \$50. A special license granted under this section shall be nontransferable to any other person, corporation, or organization and shall be clearly marked nontransferable on its face.

The commission may promulgate rules and regulations it deems appropriate to effectuate the purposes of this section.

Rules and Regulations for Caterer's Licenses

Approved: 1/12/15

Effective October 31, 2012, the legislature authorized a new type of annual, all alcoholic beverages license called the "Caterer's License." On August 1, 2012, the Governor approved Chapter 190 of the Acts of 2012 that created a new license Caterer's License pursuant to M.G.L. c.138, §12C. The Alcoholic Beverages Control Commission (ABCC) is responsible for issuing the license directly to a catering business for an annual fee of \$1500.00. There is no local involvement. A caterer's license authorizes the licensee to store, transport, sell and deliver alcoholic beverages in the ordinary course of the licensee's business. Alcoholic beverages may be stored only on the premises owned by the licensee or that the licensee has the exclusive right to occupy. An applicant who seeks a Caterer's License must also apply for a Transportation Permit, which the ABCC also issues directly for a fee of \$150.00.

The Caterer's License is an on-premises license, which allows a caterer to sell alcoholic beverages at private events (never at the caterer's principal place of business) for no more than five hours in a city or town that allows on-premises licensees under M.G.L. c. 138, §12. Licensed Caterer's cannot sell or deliver alcoholic beverages at events which occur in a licensed premises, i.e. a restaurant, hotel, club, etc.

In addition, the licensed caterer must:

- Purchase its inventory of alcoholic beverages from licensed wholesalers
- Maintain liquor liability insurance in a minimum amount of \$250,000.00/\$500,000.00
- Only permit individuals who have been certified by a nationally recognized alcoholic beverages server training program to serve alcoholic beverages
- At least 48 hours before any private event:

- (a) notify the police chief and the local licensing authority that the licensed caterer will be serving alcoholic beverages in the city/town;
- (b) provide a copy of the caterer's license to the police chief and the local licensing authority; (c) provide proof of insurance to the police chief and the local licensing authority; and
- (d) provide an emergency contact number for the license manager to the police chief and the local licensing authority.

Rules and Regulations for Club Licenses

Approved: 1/12/15

Application Procedures

1. Club license applications to be filed in duplicate with Board of Selectmen. (Information therein to be typed or printed in ink.) Application to indicate whether veterans' organization or club.
2. Following to be submitted with application:
 - (a) License fee - \$100.00 (check made payable Town of Arlington).
 - (b) Copy of Club Charter, also a copy of current membership list as of January 1.
 - (c) Copy of House Rules.
 - (d) The full names and residence addresses of the President, Treasurer, Clerk, Secretary, Directors and Manager, or other Principal Representatives of the organization.
 - (e) A copy of the vote, of the Board of Directors, or other similar body certified by the Clerk or Secretary of the organization, specifically authorizing the officer, who shall be identified by name and residence address, to sign the application for the license on behalf of the organization.
 - (f) A certified copy of the vote of the Board of Directors or other similar body, appointing a person who shall be identified by name and residence address to act as Manager or other Principal Representative.
 - (g) Certified copy of minutes of the last meeting of the membership of the organization prior to the date of application.
3. Selectmen shall cause a notice thereof to be published, at the expense of the application, within ten (10) days of receipt of application.
4. Applicant shall, within three (3) days after publication, cause a copy of the notice, attached to club stationery, to be sent by registered mail, return receipt requested, to each abutting property owner, and to any school, church or hospital located within a radius of five hundred (500) feet. Town Engineer to supply names and addresses of abutters and any school, church or hospital within five hundred (500) feet. Following statements to appear on notice sent to any school, church or hospital "As required by Chapter 138, Section 15A of the General Laws your attention is directed to the necessity of written objection to prevent the issuance of the license referred to in the above-captioned legal notice."
5. "An affidavit of the applicant or of the person mailing such notice on his or her behalf, together with an attested copy of the notice mailed, shall be filed in the office of the licensing authority." Affidavit to be made on appropriate place on application form. Registered mail return receipts are to be filed with Selectmen.
6. The Selectmen shall cause an examination to be made of the premises. (Section 12 of Chapters 138 G.L.)

7. The Selectmen shall schedule a public hearing ten days after the publication of such notice.
8. Application shall be granted or dismissed by the selectmen not later than thirty (30) days after filing; and if favorably acted upon by the Selectmen it shall be submitted for approval by the Commission not later than three days following such favorable action. Licenses shall be issued not later than seven (7) days following receipt of notice of approval from Commission (Section 16B of Chapters 138 G.L.)

Club Operation & Service Regulations

1. THE LICENSE IS SUBJECT TO GENERAL LAW 138 AND THE REGULATIONS OF THE ALCOHOLIC BEVERAGES CONTROL COMMISSION AS WELL AS REGULATIONS, GENERAL OR SPECIFIC, MADE AT ANY TIME BY THE BOARD OR SELECTMEN.
2. Unless otherwise fixed for a particular license, club licensees may sell alcoholic beverages for consumption on the premises between the hours of 11:00 a.m. and 1:00 a.m. daily.
3. The licensee shall furnish the name and address of the club, also the Manager's name, address and telephone number, to the Board of Selectmen, Chief of Police and Chief of the Fire Department. Any change in location or of manager must be reported without delay to the Board of Selectmen, the Chief of Police and the Chief of the Fire Department.
4. Club licensee shall have a bartender or manager in charge during open hours who is of good moral character and a responsible type of person. He/She shall be held accountable for keeping order.
5. The bartender or manager shall be responsible for the conduct of its members and guests in the licensed premises. He/She shall prevent undue noise and disturbance to the neighborhood.
6. The bartender or manager shall refuse to serve a member or guest who is approaching a condition of "under the influence."
7. The bartender or manager shall make an effort to prevent a member or guest from operating a motor vehicle if said member or guest appears to be "under the influence."
8. The bartender or manager shall refuse to serve any member or guest under the legal age. When in doubt of age, the bartender shall require the showing of identification cards in accordance with Chapter 138, Section 34B of the General Laws.
9. No member, guest or employee shall be served alcoholic beverages after legal hour of sale of same.

10. No person is allowed in that area of the building where alcoholic beverages are served between the hours of 1:00 A.M. and 6:00 A.M, except persons whose names have been posted with the Chief of Police who may be present for custodial purposes.
11. No alcoholic beverages shall be taken from the building.
12. No licensee shall sell alcohol beverages in any part of the premises not specified on this license.
13. The licensed premises must be well lighted at all times.
14. There shall be no indecent or immoral entertainment on the licensed premises.
15. Gambling, lotteries, or other illegal machines or games are prohibited except as otherwise permitted by law.

16A. REGULATION ON LICENSING OF AUTOMATIC AMUSEMENT DEVICES

The Application for a license of an Automatic Amusement Device or Devices at any Club or Non-Profit Organization shall not be considered by the Board of Selectmen until a vote of the membership is taken.

Prior to the vote being taken, all members of the Club or Organization shall be notified in writing. The notice shall specify "the type of machine and the name of the machine being considered". The notice shall also state that "According to the Rules and Regulations of the Board of Selectmen, no gambling or payoff on any type of automatic amusement device is allowed. If any Club or Non-Profit Organization is found to be making payoffs which are illegal and constitute illegal gambling, after a Public Hearing, at which it is substantiated that illegal gambling did take place, the Club or Organization may be subject to temporary or permanent loss of their All Alcoholic Beverage License". (Adopted 7/28/86)

16. Membership. (i.e. Associate Membership or equivalent type) in licensed clubs, other than regular membership, shall be subject to the approval of the Board of Selectmen.
17. The licensed premises shall be subject, at all times, to inspection by members of the Board of Selectmen, their Executive Secretary, Town Manager, Board of Health or their representatives, Police Department, Fire Department, or any other department or official of the town so directed by the Selectmen.
18. Violations
 - a. Generally: Any violation of Chapter 138 of the General Laws pertaining to licenses for the sale of alcoholic beverages to be consumed on club premises; any violation of the rules, regulations, or policies of the Alcoholic Beverages Control Commission relative to the sale of alcoholic beverages to be consumed on the club premises; any violation of these Policies, Rules, and Regulations; or any violation of the conditions attached to any license granted under these Policies, Rules, and Regulations may

result in additional conditions being placed on the license or in the cancellation, suspension, or revocation of the license following a hearing before the Board. Any action taken under this section shall be commenced by written notification to the licensee at the address on file with the Board. A hearing held under this section shall commence within two weeks or as soon as reasonably practicable thereafter following written notification. The Board or its agents may seize a license immediately if, in the Board's discretion, public health or safety warrants such a seizure and the penalty must begin on the same day of the week as the violation occurred. If a license is seized immediately, a hearing will be commenced within two weeks of the seizure, unless the licensee assents in writing to a longer time.

- b. Service to Underage Individuals: If, after notice and a hearing, the Board or its designee concludes that an under-aged person was served alcohol at a licensed establishment, the Board shall suspend the license as provided below, or for such other time as the Board in its discretion shall choose.

First offense:	3-5 days suspension
Second offense:	6-10 days suspension
Third offense:	10-15 days suspension or revocation

- c. This section shall not impair the Board's discretion to impose some other type of penalty in place of license suspension if the Board concludes that another penalty is appropriate. Such other penalties may include (but are not limited to) rolling back hours of operation, fixing other conditions on the license, or suspending or fixing conditions on the licensee's other licenses, such as Common Victualler or entertainment.
- d. In fixing the penalty for sales to underaged individuals, the Board may consider the following factors:
 - (i) licensee's policies and procedures and application of those policies and procedures to guard against service to underaged individuals;
 - (ii) severity and type of offense;
 - (iii) efforts made to identify purchasers of alcohol;
 - (iv) appearance of the underaged purchaser of alcohol;
 - (v) quality of the evidence of a violation;
 - (vi) circumstances of the case; and
 - (vii) number and nature of licensee's previous violations.

- 19. The Board of Selectmen reserves the right to amend these rules and regulations any time without prior notice.



Town of Arlington, Massachusetts

CITIZENS OPEN FORUM



Town of Arlington, Massachusetts

For Approval: Arlington Public Art Youth Initiative Banners on Massachusetts Avenue

Summary:

Adria Arch, Arlington Public Art

ATTACHMENTS:

Type	Description
 Reference Material	Request from Arlington Public Art



Arlington Public Art Youth Initiative

The Arlington Public Art Youth Initiative is aimed at young people in grades 7 through 12 (or the equivalent homeschool level) to promote and encourage development in the visual arts and to provide an opportunity for youth to participate in temporary public art projects in Arlington.

THIS INITIATIVE WILL BE FUNDED BY THOMAS HARTL AND FAMILY in memory of their daughter, Gracie James, an AHS student. No funding is being requested from the Town of Arlington.

We are requesting permission from the Board of Selectmen to mount a series of banners in both Arlington Center and the Heights for three months, April through June of 2016.



Who: Ten to twenty Arlington teens' artwork will be chosen by a panel of jurors

What: Images will be printed on vinyl banners, 2' x 7' or equivalent, to fit the hardware on light poles currently hanging in Arlington Center along Mass Ave.

Where: Banners will be hung along Mass Ave. in Arlington Center and Arlington Heights

When: April through June 2016

How: A call for art based on a theme as yet to be decided will go out to the community in September of 2015. The teachers and administrators of the following organizations will be made aware of the project and may choose to assign the project in class: Arlington High School, Ottoson Middle School, Arlington Catholic, The Children's Room, Germaine Lawrence School, and Minuteman High School. A call for art will also be distributed online through the Town of Arlington website, APA social media outlets, the Arlington Center for the Arts, and publicity through the Arlington Advocate to reach as wide a number of youth as possible.

- The artwork will be created so as to fit the specifications of the banners. All entries will be due December 1, 2015, and must be dropped off or mailed to a central location (TBD).
- Art will be juried by a panel consisting of one art professional from Arlington Public Art, one independent art professional, and one Town official. Artists will be notified by December 15.
- Banners will be produced in January and February, and will be hung by DPW for a period of three months in the spring of 2016.
- All competition winners and their families will be honored at a public gathering at the kick off of the exhibition.

This project will be a prototype that will hopefully be continued on an annual basis. Funding for this project is already secured, and is provided by the family of Gracie James.

DRAFT BUDGET

What	how many	cost per each	TOTAL
Printing banners	20	\$65	\$1,300
additional hardware for Arlington Heights poles - 1 time cost	10	\$75	\$750
installation of banners by Public Works	10 hours of labor	\$40 per hour	\$400
designer for logo, postcards etc.			\$500
printing of postcards, information			\$300
administrator position	240 hours per year cycle	\$20 per hour	\$4,800
			\$8,050



Town of Arlington, Massachusetts

Approval: Letter of Support for Updated Plan 2015-Open Space and Recreation Plan

Summary:

Ann LeRoyer, Chair, Open Space Committee

ATTACHMENTS:

Type	Description
<input type="checkbox"/> Backup Material	2015-2022 Report: Open Space & Recreation Plan



Town of Arlington

OPEN SPACE AND RECREATION PLAN 2015-2022



Town of Arlington

Open Space and Recreation Plan, 2015-2022

Town of Arlington

Open Space and Recreation Plan, 2015–2022

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Acknowledgments

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Bruce Fitzsimmons

March 20, 2015

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1

Plan Summary

The Town of Arlington is a densely populated suburban community with few large open spaces remaining within its borders and limited direct access to open space resources in adjacent towns. The need to preserve, protect, and properly maintain existing open spaces and recreational resources is widely recognized and deeply felt by Arlington residents.



*A bird's eye view of Arlington in 1884.
Courtesy of Norman B. Leventhal Map Center, Boston Public Library*

Changing demographics in Arlington over the past decade have altered the needs for and demands on limited public resources for many outdoor recreation, physical fitness, and sports facilities, such as the Minuteman Bikeway, playing fields, playgrounds, and other sites. Residents also regularly express their desire for more natural green spaces for walking, bird watching, and other contemplative pleasures.

This document is Arlington's fourth Open Space and Recreation Plan. It focuses on many specific accomplishments and other steps taken to address the goals, objectives, and actions outlined in the 2007 Plan and the update to the Action Plan as approved through 2014.



All ages enjoy the Minuteman Bikeway. Courtesy of Open Space Committee

The Town continues to face serious management, staffing, and financial challenges to address these diverse needs for conservation land, parks, playgrounds, and outdoor sports facilities. Progress has been made over the past seven years to enhance several key sites, and several new volunteer Friends groups have been formed to advocate and raise funds for specific parks. However, the Town also needs to develop a stronger town-wide open space management program and incorporate regional solutions to meet the competing demands of many different constituencies.

This 2015 Plan presents an expanded inventory of Arlington's open spaces, documents open space and recreation needs, and establishes open space aspirations. Arlington's natural environment is a precious and limited resource that has been difficult to acquire and maintain, and it needs to be protected ardently. This Plan presents open space goals, objectives, and actions that will guide Arlington's open space philosophy, planning, and management through 2022.

- Acquire ecologically valuable undeveloped lands or ensure their protection through conservation restrictions or other means.
- Preserve, maintain, and enhance existing open spaces, including watersheds, water bodies, and natural areas; parks, playgrounds and outdoor recreational facilities; and historic sites and cultural landscapes.
- Coordinate and strengthen local and regional planning and management of open spaces in conjunction with various Town departments, commissions, and volunteer groups, and work closely with nearby towns and regional entities and with state and federal officials and agencies.
- Increase public awareness, accessibility, and community stewardship of the Town's open spaces and recreational facilities.
- Use environmentally sustainable planning and engineering approaches for climate change and natural resources management.



*Volunteers work at the Wildlife Habitat Garden at the Arlington Reservoir.
Credit David White*

2

Introduction



Fall colors at the Arlington Reservoir. Courtesy of Open Space Committee

A. Statement of Purpose

This Open Space and Recreation Plan reflects Arlington's intention to preserve, protect, and enhance its valued open spaces. Through research and analysis of the Town's open space needs and past accomplishments, this Plan aims to:

- establish Arlington's short-term and long-term open space goals, objectives, and priorities;
- present a broad statement about Arlington's long-term open space philosophy;
- document Arlington's current open space inventory; and
- provide updated information as required by the Commonwealth of Massachusetts guidelines for open space plans.

This Plan for 2015-2022 builds on Arlington's 1996, 2002, and 2007 Open Space and Recreation Plans, reinforces the Town's original goals, reports on accomplishments to date and goals that have not yet been implemented, and outlines new goals and actions to be addressed during the next seven years and beyond. An important overriding purpose of this Plan and the entire open space planning process is to foster public awareness of open space issues and to encourage the participation of Town officials and concerned citizens in the Plan's implementation.

B. Planning Process and Public Participation

One of the key recommendations of the original 1996 Plan was establishment of a standing committee of citizens and Town representatives involved with open space issues to "facilitate, implement, update and further" the goals, objectives, and actions outlined in that Plan. Town Meeting approved creation of the Open Space Committee and the first members were appointed by the Town Manager in 1996.

Since then, representatives of several Town entities (including the Park and Recreation Commission, Conservation Commission, Redevelopment Board, and the Departments of Planning and Community Development, Public Works, and Human Services) and concerned citizens have met regularly to exchange ideas and discuss ways to further protect the Town's natural resources and enhance appropriate uses of its open spaces and recreational facilities.

The Open Space Committee (OSC) serves an oversight function but does not have direct responsibility for the management of any specific Town properties. Its primary purpose is to enhance communication and coordination among those entities that do have management authority.

In addition, the OSC seeks to raise broad-based community concerns and to advocate for the planning, stewardship, and use of the Town's natural resources, which are a major element in our quality of life. The OSC believes that the best way to fully address the needs and problems of the Town's open spaces is to develop goals, procedures, and policies in a comprehensive way.

Open Space Committee Members (2014)

- Jane Auger (Citizen)
- Teresa DeBenedictis (Department of Public Works)
- Lisa Decker (Redevelopment Board)
- Joey Glushko (Planning and Community Development Department)
- Michele Hassler (Cemetery Commission)
- Elizabeth Karpati (Vision 2020)
- Patsy Kraemer (Department of Human Services)
- Ann LeRoy (Citizen), Chair
- Leslie Mayer (Park and Recreation Commission)
- David White (Conservation Commission), Vice Chair

In addition to their "official" representation as listed above, Open Space Committee members participate in numerous other open-space related activities in Town. For example, two members are elected Town Meeting representatives (LeRoy, Mayer). Members also sit on various other volunteer committees, including: Vision 2020 Standing Committee (Glushko, Karpati); Vision 2020 Reservoir Committee (Karpati, LeRoy, White); Vision 2020 Spy Pond (Glushko) and Sustainable Arlington committees (Karpati); Tree Committee (Decker); Arlington Garden Club (Kraemer); and Arlington Land Trust (LeRoy). Through these various connections and networks, the committee members actively sought input from a broad range of perspectives, including Town officials, civic activists, and concerned residents, to make this Plan as complete as possible.

Town Committees and Community Groups

The level of public participation in open space and recreation issues has continued to increase since the 1996 Plan began focusing attention on

open space needs. The proliferation of volunteer citizen groups concerned with specific neighborhood parks or recreational facilities has been very exciting. As the Town's population continues to change, current residents seem to be more actively engaged in their environment and concerned about the limited resources within our densely developed community. Representatives of Friends groups, land stewards, and other groups meet regularly on matters of common concern, including ways to raise funds for the maintenance of parks and open spaces.

Following is a sampling of the Town committees and volunteer community groups that hold regular meetings relating to open space and recreation issues:

Town Committees

- Arlington Historical Commission
- Arlington Redevelopment Board
- Conservation Commission
- Park and Recreation Commission
- Tree Committee
- Tourism and Economic Development (A-TED)
- Vision 2020 Committees (Standing, Environment, Reservoir, Spy Pond, Sustainable Arlington)

Community and Nonprofit Groups

- Arlington Bicycle Advisory Committee
- Arlington Land Trust
- Arlington Parks Alliance
- Friends of Arlington's Great Meadows
- Friends of Menotomy Rocks Park
- Friends of Robbins Farm Park
- Friends of Spy Pond Park
- Friends of Symmes Conservation Area
- Friends of Waldo Park
- Friends of the Winfield Robbins Memorial Garden

- Land Conservation Stewards Program
- East Arlington Good Neighbor Committee
- East Arlington Livable Streets
- Sunnyside Neighborhood Association

Town Meeting and Annual Reports

Town Meeting has responded positively to a number of specific planning and open space issues over the past several years. In its sessions from 2002 through 2014 Town Meeting expanded and/or clarified numerous details regarding the open space district zone, historic districts boundaries, and wetlands bylaws; adopted goals for the Reservoir proposed by the Vision 2020 Reservoir Committee; established a Tree Committee and a Cemetery Expansion Study Committee; and approved bylaws to enhance the use and maintenance of parks and recreational facilities, including off-leash dog activity, playing field usage, and graffiti and vandalism.

Previously, Town Meeting voted in 2000 to approve the 1996 Plan's goal of acquiring the Mugar parcel for open space purposes, and approved new zoning regulations concerning transportation districts in Town, in particular as those regulations affect the Marquis/Minuteman Bikeway. In May 2001, Town Meeting reaffirmed its commitment to preserving the Mugar property as open space and approved a new open space zoning district and the designation of nearly 50 sites to be transferred into that district.

In most years since 1996 the Town has received Annual Reports from the Open Space Committee for inclusion in the Town-wide Annual Report, which is published each spring (see Appendix A for recent reports).

Surveys

Surveys are useful to gauge the level of residents' awareness and concern with open space and recreation issues. Vision 2020 is a committee of the Town that works in a partnership with its residents, employees, and leaders on a vast range of goals and projects. As part of the annual Town Census mailing, Vision 2020 distributes a survey to help identify concerns and priorities.

The January 2014 Survey addressed the following key questions related to open space: awareness and access to smaller and lesser-known open space and recreational facilities; the adequate number of various types of facilities; why residents do or do not visit local open spaces; and how they prefer to learn about open space and recreational resources and programs (see Appendix B).

Results from about 6,500 households included the following highlights:

- Among the twelve lesser-known sites listed, only three had been visited by more than 40% of respondents. Most of the sites were unknown by 30% to 56 % of respondents.
- Outdoor/indoor swimming received the highest "inadequate" response, followed by outdoor ice skating and community gardens. Other types of facilities, including playgrounds, neighborhood parks, and tennis courts, were considered to be adequately available.
- 71% of households responded that they do use Arlington's open spaces and recreational facilities. The main reasons for not using them were lack of awareness and lack of interest.
- In response to the question about how to learn about these facilities and programs, most respondents noted websites (32%) or other on-line sources (20%), while others cited seasonal brochures (21%) or printed news media (17%).

In 2012-2014, the Town also undertook a comprehensive Master Plan process, including surveys and public meetings to address open space, recreation, and natural resources, as well as other land use and planning issues such as transportation, housing, and economic development. These survey findings combined with formal and informal input from the committees and groups noted above, as well as from many other individual sources, help form the foundation of public participation and support for open space and recreation goals that make this planning process so relevant and timely to Arlington residents.



Master Plan meeting at the Hardy School. Courtesy of Department of Planning and Community Development

Consultant Services

In the spring of 2014, the Open Space Committee requested and received \$9,900 from the Town's Community Development Block Grant program to hire a consultant to help the committee members develop the new 2015-2022 Open Space and Recreation Plan. Town Meeting approved those funds, and in May the Town selected Vanasse Hangen Brustlin, Inc. (VHB) to prepare the Plan with the Open Space Committee. Senior planner Ralph Willmer FAICP was designated the project manager for VHB, as he had been for Arlington's 2007 Plan.

C. Accomplishments, 2008-2014

This section lists many of the accomplishments since 2008 that have protected and enhanced Arlington's open spaces and recreational facilities, and have addressed related issues of community involvement, sustainable development, climate change, and other concerns. It follows the format established in February 2010, when the Open Space Committee submitted an update for the Chapter 9 Action Plan of the 2007-2012 Open Space and Recreation Plan. That updated list of goals and objectives covered the period from 2008 to 2014, as authorized by the Executive Office of Energy and Environmental Affairs.

Some of these accomplishments were expressed as general ideas or goals in the Town's earlier Open Space Plans, but they took shape through the hard work and cooperation of many Town boards and commissions, residents, private groups, and Town employees. The Open Space Committee wishes to acknowledge the contributions of many individuals and organizations that recognized a wide range of opportunities to advocate for and work towards protecting our Town's open space and recreation resources.

Goal 1. Acquire undeveloped lands for permanent protection as open space in neighborhoods throughout the Town.

Elizabeth Island

The major success over the past seven years is the Arlington Land Trust's 2010 acquisition of Elizabeth Island in Spy Pond. Long privately owned and zoned decades ago for two housing lots, the 2-acre island was put up for sale in 2006. The owner first tried to sell it for housing for nearly one million dollars, but after receiving no offers she was eventually convinced to sell it for a more modest sum. The Arlington Land Trust (ALT), established in late 1999 as a nonprofit organization that works to acquire and hold easements on privately owned land for conservation purposes, conducted the lengthy negotiations with technical help from the Massachusetts Audubon Society.



Elizabeth Island in Spy Pond. Courtesy of Arlington Land Trust



The state Conservation Partnership Grant Program contributed \$85,000, and ALT ran a local fundraising campaign that brought in \$180,000 in private donations. The island was purchased by ALT in December 2010. It will remain undeveloped, with minimal improvements planned to enable it to be used safely for public access and environmental education. Mass Audubon and the Arlington Conservation Commission jointly hold the conservation restriction.

Symmes Hospital Site

After many years of uncertainty, more than 8.7 acres of open space at the 18-acre former Symmes Hospital site have been preserved, including two new landscaped parks and other wooded areas open to the public. The Arlington Conservation Commission and Arlington Land Trust hold the conservation restriction on these privately owned lands, and a neighborhood Friends group is being established to monitor the site. Maintenance and use of the open space is overseen by the management company.



View of Boston from Hattie Symmes Park. Credit: Ann LeRoyer

The former hospital property had been put up for sale in 2001 by then owners, Lahey Clinic and HealthSouth. It was acquired by the Town in 2004 after an extensive community planning process, including a Proposition 2½ override, in order to control redevelopment of the site and preserve its open space. After many delays and revisions due to subsequent problems in the housing market, the Town sold the land to developers and construction began in 2012. The project, now known as Arlington 360,

includes 12 townhouse condos and 164 apartments, of which 15 percent are set aside as affordable units. A separate 90-unit assisted living facility is owned and managed by BrightView. Sales and rentals at both properties began in 2013, and residents began moving into them in spring 2014.

Mugar Site

The 17-acre Mugar property in East Arlington remains the highest priority goal for acquisition and protection as open space and floodwater storage. Town Meeting voted nearly unanimously in 2000 and again in 2001 to seek to acquire the property. The Arlington Land Trust and Town officials negotiated an acquisition agreement with the owner in 2010, however, the owner withdrew once the ballot question to abolish MGL 40B failed to pass. In the last five years a developer working with the Mugar family has expressed intentions to pursue some development.

In 2010 FEMA released updated floodplain maps that show much of the Mugar land encumbered by several levels of flood zones, making extensive development difficult. The Arlington Redevelopment Board voted in 2010 to formally adopt the Open Space and Recreation Plan, thereby making the Plan, including acquisition and preservation of the Mugar property, Town policy, and thus signaling the Town's discouragement of any development of the property.

A Lost Opportunity

One example of a lost acquisition opportunity was a narrow plot of undeveloped land at the southeast corner of Spy Pond in the Kelwyn Manor neighborhood which was sold for a house lot despite efforts by the Town to acquire it from the Roman Catholic Archdiocese of Boston. A small benefit of the sale was that the new owner cleared it of a tangle of invasive plants, mainly oriental bittersweet, that had spread to nearby open areas including the path next to Spy Pond along Route 2.

Goal 2. Preserve, protect, and enhance existing open spaces, including watersheds and natural areas; parks, playgrounds, and outdoor recreational facilities; and historic sites and cultural landscapes.

2-a. Preserve and protect the Town's natural heritage, including watersheds, water bodies, native flora and fauna, and all existing natural areas.

Management Plans

The management plans for major open spaces and recreational facilities developed under the previous Open Space Plan were reviewed and updated, but no new plans were added. It was determined to be difficult to implement the plans because many different entities hold responsibility for the oversight of parks and conservation areas, and the Open Space Committee has no authority to enforce use of the site-specific management plans.

Mill Brook

Mill Brook flows nearly three miles through the central valley of Arlington and was the site for much of the early, water-powered commercial activity in the town. The waterway has remained essentially unchanged for decades, since extensive channeling and culverting were done to control its flow and fill in former mill ponds for town playing fields and other uses.

Several recent efforts to enhance the physical and ecological integrity of the Mill Brook corridor have been made during occasional clean-ups and some improvements by abutters, such as landscaping at the Old Schwamb Mill historic preservation site. The developers of the former Brigham's property, adjacent to an open stretch of the brook and a small park at the Arlington High School, renovated the area as part of their housing project.

A linear park along Mill Brook was first proposed in the 1920s, and was revisited in a graduate student design study by Mia Lehrer (now a well-known landscape architect) in 1976. The idea was revived again in 2009 by the Open Space Committee (OSC) with participation from other interested



Mill Brook in Arlington Heights. Credit: Brian Barber

individuals and representatives of groups such as the Park and Recreation Commission, Conservation Commission, and Redevelopment Board. The study group inspected current conditions along the brook, which is now about one-third each culverted, channeled, and free-flowing, and listed the ownership of the lands through which it flows, which is largely private and developed. The group prepared a report, Mill Brook Linear Park Report, describing these conditions and offering a vision of what could be done, such as a series of “pocket parks” on still-available land. The report was presented to the Board of Selectmen in 2010. It was publicized through an exhibit in Robbins Library and is displayed at the annual Open Space Committee booth on Town Day.

Interest in the Mill Brook corridor has been heightened as an element of the Arlington Master Plan, a major planning initiative that will be completed in 2015. Pending any funding for further feasibility studies and implementation, the report serves to show what could be done and perhaps to inspire private projects in the area to be planned.

Trees and Native Vegetation

Arlington currently has around 18,000 trees on public property which are cared for by the Department of Public Work’s Natural Resources Division. Many of the trees planted years ago are not native, including the abundant and invasive Norway Maples. The DPW website offers some helpful links about Arlington’s tree population and what to do if residents suspect a Town tree is diseased or damaged, recommended trees for planting, and other tree- related information.

The DPW also works with the Arlington Tree Committee, which was established in 2010 by the Arlington Board of Selectmen, to promote the protection, planting, and care of trees by residents in Arlington. The BOS, DPW, and committee have expressed ongoing concern with NStar’s severe pruning of street trees that causes damage to the trees and unsightly streetscapes. This oversight must weigh appropriate tree trimming against the potential loss of power from storm damage and fallen trees or branches.

Arlington values its street trees, but has lost a lot of trees in microbursts and other storms that hit East Arlington in particular over the past several years. The Tree Committee created a list of recommended native trees for replanting. The Town also maintains a tree program that includes sales of street trees to residents, who are asked to keep the new trees watered until they are well established, and the replacement of trees that must be removed because of disease or safety concerns.

Rain gardens are a relatively new idea for creating native perennial gardens in areas that can capture rain and runoff. In 2011 The Arlington Garden Club worked with the DPW and Sustainable Arlington to create a demonstration rain garden at Spy Pond Park, and in 2012 gardens were established at the Hardy School and near Hurd Field. A simultaneous EPA demonstration project repaved half of the parking lot at Hurd Field with pervious pavement and half with conventional material. This project is intended to prevent erosion and runoff into the adjacent Mill Brook.

Invasive Plants

Invasive plants, notably Japanese knotweed, buckthorn, black swallowwort, garlic mustard, and Oriental bittersweet, are found throughout Arlington. On Town properties and along the Minuteman Bikeway, the DPW and/or volunteer Friends groups regularly work to remove invasives, but it is a continual struggle. Sustainable Arlington, the Garden Club, Conservation Commission, and other groups actively promote public education around invasives and encourage the use of native plants for private landscaping.

Spy Pond is periodically treated with the chemical Sonar to control the resurgent population of Eurasian water milfoil. This compound works by interfering with photosynthesis and thus does not harm animal life.

Two large stands of phragmites in Spy Pond, at Kelwyn Manor Park and on the south side of Elizabeth Island, have existed for years, and had begun to spread to other shoreline properties, including that of the chairman of the Vision 2020 Spy Pond Committee. He and the committee spearheaded an effort to control the spreading reeds, carried out a fundraising campaign,

and obtained the consent of the abutters to continue treatments. The Town manages the contract (with the same company that treats the pond for underwater weeds) and handles the money as a subset of the Water Bodies Fund. Beginning in 2009, three years of spraying killed most of the plants; the dead stalks were knocked down by volunteers and carted away by DPW. Control of small patches that regenerate from surviving roots is ongoing, and the cleared areas have been seeded with appropriate native plant species.

The Water Bodies Fund also supports regular removal of water chestnuts in Arlington Reservoir and treatment of Eurasian milfoil, nonnative curly-leaved pondweed, and filamentous algae in Hill's Pond in Menotomy Rocks Park.

Accomplishments at Selected Major Sites

Spy Pond

The Vision 2020 Spy Pond Committee's Trails Days project of improvements along the state-owned path between Route 2 and the south end of Spy Pond celebrated its 10th anniversary in 2014. This effort has enlisted the help of various groups, notably the Appalachian Mountain Club, which supplied muscle and the needed expertise for building steps in several places, using broken curbstone pieces donated by Arlington DPW. Now fishermen and other visitors can reach the water's edge without eroding the slope. Poison ivy has been nearly eradicated, and volunteers from the committee and the community have cleaned up massive amounts of trash. The worn and bumpy footpath at the southern end of Spy Pond, connecting Pleasant Street and Lake Street, was repaved in 2011 by MassHighway, which owns it, to the delight of both walkers and bicycle commuters.

The Vision 2020 Spy Pond Committee also continues to produce its annual flyer asking people to use low- or no-phosphorus fertilizer to protect the pond from having excess phosphorus washed into it and thereby unintentionally promoting weed growth. The effect is hard to measure, but it probably keeps the weed problem from being even worse. The leaflets

are distributed by students from the high school “Workplace” program throughout the Spy Pond watershed. Several volunteers have been trained and licensed to addle Canada Geese eggs each spring to keep that population from increasing, with some success.

The nonprofit Friends of Spy Pond Park is another very active volunteer group. From April to October they have monthly work days for cleanup and removal of invasive plants in the park, enlisting both community groups and casual park visitors in the effort. They consult with DPW to try to mitigate erosion along the park paths, and members are on the alert to explain to people seen feeding the Canada Geese that this is both harmful and contrary to Town bylaws. The Friends group also sponsors an annual Fun Day with activities for all ages. In collaboration with the Arlington Land Trust and the Arlington-Belmont Crew, the day includes boat trips to Elizabeth Island and guided tours by Land Trust members. The Crew’s high school students, who train on Spy Pond, have participated in a variety of other community programs, including the removal of invasive plants.



At the boat launch during Spy Pond Fun Day. Credit: Ann LeRoyer

The Park and Recreation Commission has overseen several improvements on their recreational facilities around the pond, including replacement of the safety surfacing at the Spy Pond Playground to eradicate a sand wasp issue in 2009, replacement of tot ride-on equipment, and the repair of cracks at the Spy Pond Tennis Courts, with funds raised through volunteer friends groups. The courts will be completely rebuilt in 2015. The use of Spy Pond for water sports has also been enhanced with canoe and kayak rentals during the summer months. In 2009 and 2010, a private company oversaw the rentals, and since 2011 the Recreation Department has managed the rental program. The private Boys and Girls Club, located on the pond, also hosts a number of water-based activities for children in its programs.

Arlington Reservoir

After the Reservoir dam was reinforced and a new spillway was completed in 2006, an anonymous donor gave \$3,000 for beautification of the area. After some delays in planning, a volunteer landscape architect designed a Wildlife Habitat Garden, which was installed in the spring of 2010 on both sides of the bridge over the new spillway. It features native plantings, grasses, and flowers on the sunny side and a few trees, shrubs, and other flowers on the shady side, as well as some rocks and logs to provide habitat for small wildlife and seating for visitors. Arlington DPW was very helpful in preparing the site with its heavy equipment, providing large rocks and logs, wood chips, and mulch, and installing a water line. A small but dedicated group of volunteers planted the garden and has been maintaining it. Most of the plants have grown exuberantly and the garden has garnered appreciative comments from people walking around the Reservoir.

The Reservoir regularly becomes badly infested with water chestnuts, which are removed by mechanical harvesters and by volunteers in canoes. The Water Bodies Fund supports this nearly annual project to keep the invasives under control.

In 2012 the Reservoir Committee of Vision 2020 created a calendar with members’ photographs of the Res and the habitat garden and sold it at

Town Day and through several local stores to raise funds for additions to the garden. The committee also organizes occasional work days to clean up around the Reservoir and to spread wood chips on the perimeter path. The high school cross-country team, which uses the path for practice, has participated vigorously in the latter effort.

Since 2010 the Reservoir Beach has been named one of the state's top 10 "swimming holes" by Boston.com. A 2013 survey of residents about the usage, concerns and suggestions for improvements at the Reservoir revealed the continuing popularity of the beach for family-oriented activities and year-round use as a passive recreation destination. Many suggestions for improvements will be prioritized in the coming years. The sale of seasonal beach tags and daily passes for families and individuals has remained strong over the past six years, and several concerts for youth and adults were sponsored by the Recreation Department during beach hours in 2014. The proceeds from beach tags and other events are used to maintain the beach environment.

Arlington's Great Meadows

This important 183-acre wetland area is owned by the Town of Arlington, but is located within Lexington. This unusual arrangement has made it difficult to establish permanent protection of the property as conservation land. In 2009-2010 the Friends of Arlington's Great Meadows, with the help of experts from Mass Audubon, determined that a growing wooded area of the Great Meadows should remain open, and they carried out a tree-cutting project to restore and maintain the area as an upland meadow. Other recent Friends projects include construction of two boardwalks, a footbridge, trail maintenance, educational programs, and control of invasive plants.



All ages enjoy the Reservoir beach. Courtesy of Open Space Committee

2-b. Preserve, protect and enhance Arlington's parks, playgrounds, playing fields, and other outdoor recreation spaces.

Upgraded Park and Recreation Facilities

The Town's Park and Recreation Commission and Recreation Department have policy and management oversight for parks, playgrounds, playing fields, and other facilities, but the Department of Public Works is responsible for regular maintenance. Capital plans for parks and recreational facilities are reviewed and approved by the Town's Capital Planning Committee.

In 2009, a Master Plan was completed for the Summer Street Sports Complex and approval was received from Town Meeting for a one million dollar rink facility renovation project, followed in 2010 by a major overhaul to the Town's only ice skating facility. Replacement and expansion of the rink bed and board system, installation of a lower ceiling for energy efficiency, and dehumidification improvements were among the enhancements made to the aging facility. On December 28, 2010, a dedication ceremony was held to celebrate the naming of the renovated Ed Burns Arena.

In 2010, upgrades and safety improvements to the Thorndike Field parking area were completed. The area, adjacent to the Minuteman Bikeway, sees heavy use by cyclists, pedestrians commuting to the Alewife T-station, and field users. Off-site overflow parking alternatives and signage to help control access were identified. The project focused on improving pedestrian and vehicular safety, traffic flow, drainage, and landscaping improvements in an environmentally sensitive location.

Renovations were completed in 2011 on the Summer Street Playground, basketball court and multi-generational area. The project was designed to work within the context of the Sports Complex Master Plan, and incorporated recommendations from the Arlington Police Department to help improve safety and reduce vandalism. A highlight of the renovation is a large completely handicapped accessible children's play structure with zero-entry ramp, located between Buck and Hill's Hill fields. A tree-shaded

multi-generational area behind Summer Street Field provides bocce courts, game tables, a circular walking path with fitness stations, and young child play elements.



Accessible play structures at Buck Field off Summer Street. Credit: Ann LeRoyer

In 2012 the Wellington Tennis Courts were completely renovated, and lights were installed, making it Arlington's first lighted tennis facility.

In the fall of 2013, the renovation of the Florence Avenue Playground, in the park adjacent to the Dallin School, was completed. The new playground area was laid out along the front side of the park and includes play elements and swings for multiple ages, a zip line, and a splash pad. A new welcoming entrance and landscaping were incorporated, and the area that formerly had outdated toddler play equipment was left as a grassy area for more passive recreation.

The renovation of Hibbert Street Park/Playground in 2014 replaced outdated play equipment and improved the layout and entrances of this small neighborhood "pocket park."

The 2014 North Union Spray Park project focused on total replacement of all water play features and the outdated systems for this recreational asset that is heavily used by many in the warm days of summer.

Public/Private Partnerships

Several recreational facilities have benefited from collaborative projects. Buck Field, the youth baseball field located on Summer Street, was renovated with funds and oversight provided by the Arlington Youth Baseball and Softball Association as a gift to the town. With financial assistance from the Friends of Robbins Farm Park, the two hill slides at the playground were replaced in 2011. Through the efforts of the Friends of Waldo Park, an installation of public art was completed in 2013. A swan sculpture was created for and installed in Spy Pond Park in 2014, with support from the Town's Public Art Fund.

Fundraising

In 2014, a fundraising event to benefit the parks in Town was held at the Arlington Reservoir in coordination with members of the Arlington Parks Alliance. An Annual Golf Tournament to raise funds for recreation programs is held at the Hillview Country Club. Other recent fundraising campaigns have supported Phragmites control efforts in Spy Pond and maintenance of the Wildlife Habitat Garden at the Reservoir.

Other Amenities

A successful pilot program was approved and monitored for the seasonal installation of portable restrooms at many parks and fields over the past several years. With help from the Disability Commission in obtaining CDBG funds, this commitment ensures that all of the portable restrooms, which are funded by donations from local sports organizations and Friends groups, are handicapped accessible units.

Off-leash Recreational Area (OLRA)

In the spring of 2010, Town Meeting approved a bylaw amendment for limited off-leash morning hours at selected Town parks. The Recreation Department and Park and Recreation Commission have developed rules

and regulations for where and when off-leash dog activity is allowed and published a brochure for reference. In addition, following a feasibility study highlighting several potential options, Thorndike Field was selected as the location for Arlington's first dedicated fenced off-leash recreation area (OLRA) for dogs and their owners. Funding for the project came mainly from a gift by the Stanton Foundation, and construction of the facility was completed in the spring of 2012.

Minuteman Bikeway

The Minuteman Bikeway is a rail conversion amenity which extends from Arlington's eastern border near the MBTA Alewife Station through the Town and on to Lexington and Bedford; it is almost 11 miles in length. The three communities each have jurisdiction over the segment in their own town. With funding from the State's Recreation Trails Program in 2011, the three communities worked with a consultant on a report (Navigating the Minuteman Commuter Bikeway) to develop programs to unify the policies and look of the Bikeway; they produced a new bikeway map in 2013, and are working on a signage and way-finding program.



The Minuteman Bikeway is popular all year. Credit: Ann LeRoy

Representatives from the three communities meet at least annually to work on common and coordinated efforts. The Arlington Bicycle Advisory Committee organizes clean-up efforts and monitors the Bikeway for safety issues, and promotes the ease of cycling around town with an annual spring family-oriented bike tour. In May, July, and September Bikeway User Counts are performed by volunteers to document the high (and increasing) user volume on the Bikeway. While pedestrian and cyclist numbers have increased each year, a marked increase in the use of the Bikeway by joggers has also been noted. This increased activity, in types of users as well as numbers, speaks to the Bikeway's popularity, as well as the need to fund regular maintenance for the amenity.

2-c. Preserve, protect, and enhance Arlington's historic open spaces and cultural landscapes.

Identify, Protect, and Maintain Key Sites

Arlington values its historical and cultural landscapes, and has several Town commissions, nonprofit organizations, and other volunteer groups that work to identify, protect, and maintain key sites. These include the Historical Commission, Historic District Commissions, Arlington Historical Society, Arlington Commission on Arts and Culture, the Old Schwamb Mill Preservation Trust, and the Cyrus Dallin Art Museum in the historic Jefferson Cutter House.

The Battle Road Scenic Byway links four towns – Arlington, Lexington, Lincoln, and Concord– through which the British regulars passed on April 19, 1775 at the beginning of the American Revolution. These towns, with Minute Man National Historical Park, the Massachusetts Department of Transportation, and the Metropolitan Area Planning Council, are collaborating to highlight the historic, cultural, recreational, scenic, and natural resources along this route.

The Commonwealth of Massachusetts officially designated the Battle Road Scenic Byway on November 6, 2006, and MAPC completed a Corridor

Management Plan for the Byway in Spring 2011. It proposes strategies to manage transportation, land use, and tourism along the Byway. The plan provides a guide for preserving and promoting Byway resources while recognizing that development pressures and opportunities exist in close proximity to these esteemed resources. In Arlington some of these resources along Massachusetts Avenue are the Old Schwamb Mill, Benjamin Locke house and store, and Foot of the Rocks in the Heights; Jason Russell House, the Civic Block, and Mt. Pleasant Cemetery in the Center; and the Butterfield-Whittemore House and Alewife Brook Reservation near the Cambridge border.

Related to this project, in 2013, the Freedom's Way Heritage Association launched Patriots Paths, an outreach effort to identify Revolutionary sites and compile local stories from ten participating communities, including Arlington. The Freedom's Way website includes a list of venues in Arlington that represent the path of the patriots in 1775. These sites include historic houses, civic buildings, burial grounds, and sites.



Historic Jason Russell House. Credit: Ann LeRoy

The Arlington Committee on Tourism and Economic Development (A-TED) serves as a link between history, art, culture, and economic development. Board members include a Selectmen, the Planning Director, and representatives from the Redevelopment Board, Cultural Council, Historical Commission, Chamber of Commerce, and School Committee. ATED's mission is to promote and develop Arlington as a destination for business, culture, recreation, and entertainment. The group recently co-hosted a Summer Arts Festival, funded in part with a grant from the Cultural Council.

In addition, A-TED secured funding from Town Meeting to construct a small interpretative center near the Uncle Sam Monument. The visitor center opened in the late summer of 2014. Other projects include the development of distinctive directional signage for Arlington's four museums/cultural institutions and other cultural resources, and development of a website to promote cultural and economic resources.

Selected Interpretative Programs

- Old Schwamb Mill maintains active membership and school education programs relating to historic mill operations, the mill pond system, and Mill Brook, and offers walking tours of the area with other organizations such as Walking in Arlington.
- Jason Russell House and Smith Museum, owned and managed by the Arlington Historical Society, continue varied programs on Arlington history.
- Patriot's Day parade and Minuteman Revolutionary War re-enactments occur annually.
- Cyrus Dallin Art Museum, located in the historic Jefferson Cutter House in Arlington Center, offers regular exhibits, educational programs, and other events relating to the work of well-known sculptor Cyrus Dallin who lived and worked in Arlington for nearly 40 years. A special gallery in the lower level of the house is available for changing exhibits by local artists.

- The Friends of Menotomy Rocks Park and Friends of Robbins Farm Park, with the Arlington Center for the Arts and local businesses, cosponsor outdoor performances of Shakespeare plays.
- Other public art programs in the parks and around town are being sponsored by the Vision 2020 Public Art Committee, in cooperation with other Town boards and committees. The first Art Rocks Menotomy project, a temporary installation of artwork in that park, was held in the summer of 2014. Art Rocks Spy Pond will occur in 2015, and other events are planned for the future. The Public Art Committee also sponsors an annual decorated chair exhibit, "Chairful Where You Sit," and has begun a program for local artists to paint transformer boxes on public streets.
- Friends of Arlington's Great Meadows offers natural history tours and other education programs in that historic 183-acre watershed.

Goal 3. Coordinate and strengthen local and regional planning and management of open spaces in conjunction with various Town departments, commissions, and volunteer groups, and work closely with nearby towns and regional entities and with state and federal officials and agencies.

3-a. Work within the Town of Arlington to better coordinate and manage open space goals and objectives.

Role of the Open Space Committee

The OSC submits annual reports to the Town Meeting for publication in the Town's Annual Report (see Appendix A). Diverse representation on the committee (Conservation Commission, Planning Dept., Redevelopment Board, Public Works Dept., Cemetery Commission, Human Services Dept., Park and Recreation Commission, Vision 2020) encourages the coordinated efforts of users and caretakers in the management of open spaces. The committee meets with Friends groups and other interested parties to hear about concerns and helps to coordinate efforts to address roles,

interaction, and support of DPW personnel with volunteers and stewards. The committee also worked with the Master Plan Advisory Committee and Planning Department on drafting sections of the master plan relating to open space, natural resources, and recreation.

Cemetery Expansion

The Cemetery Expansion Study Committee established by Town Meeting in 2006 recommended establishing a columbarium in Cooke's Hollow, but this proposal was not approved by Town Meeting in 2011. After reexamination of an area formerly thought unsuitable for burials, some additional space for cremains purposes was found within the boundaries of Mount Pleasant Cemetery. Currently the Cemetery Commission is in the process of finding a bidder for the columbarium project based on the approved architectural design. It is hoped that the Mt. Pleasant Columbarium will be finished by July 1, 2015.

In addition to this project, the cemetery has set aside two areas for expansion. One area is for the start of a green cemetery for cremains only and the other area is to be the next dedicated veterans section for those who have served in the Gulf and Middle Eastern conflicts. After the last of the earth burial space has been used, the columbarium and green cemetery will be the only options available in the 59-acre cemetery.

Town Policies on the Use of Open Space

The Park and Recreation Commission has developed and revised a number of policies regarding the use of parks and recreational facilities under its jurisdiction. A Policy Handbook of all existing PRC policies was published in 2014. Following are some of the highlights:

- The playing field policy was reviewed in 2010 with an eye to the increased use of lights and amplification equipment. The policy was enhanced to control the use of these amenities to minimize disruption to neighborhoods and to require compliance with independent monitoring and the provision of penalties. In its first year of implementation, 100 percent compliance by field users was achieved.

The policy defines "no loitering" time limits for groups with permits to use parks and fields.

- To help ensure equity and the protection of Town properties a policy for the placement and use of storage sheds on Town fields was developed. Sports league expansions and the use of Town facilities continues to be monitored, including working with the Arlington/Belmont Crew program to insure its compliance with the Town's motorboat bylaw in its use of Spy Pond.
- In 2013 policies and forms for members of the community to request picnics and special events at Arlington's parks were reviewed and updated, and are available online. The field permit policy, gifting policy and a Town-wide policy on leaving toys and other items at parks, fields and playground were all reviewed and updated in 2013. Efforts to develop an equitable policy related to requests for hanging informational banners about special events on Park and Recreation properties were met with obstacles and were abandoned. Policies related to the temporary and permanent installation of art in the parks and a standard design for park and field entrance signs are currently being developed.

Natural Resources Staffing

OSC appreciates the ongoing cooperation of DPW as described in other sections of this report, but the planning and budgeting needed for a senior natural resources professional and additional workers have not yet been approved or implemented. These human resources are badly needed.

Ecological Impacts

The warrant article passed by Town Meeting to create a fund to support regular water quality testing and monitoring of all the Town's water bodies, and treatment as found to be needed, was approved by the State Legislature in 2008. The Water Bodies Fund receives annual appropriations from Town Meeting, which has made possible weed control in several water bodies at the most appropriate time in the weeds' life cycle.

Sustainable Arlington, a committee of Vision 2020, and other groups work on various projects related to environmentally sensitive areas that may be subject to climate change impacts, such as flooding in East Arlington, control of invasive plants, and energy efficiency initiatives.

Capital Improvements Planning

The Park and Recreation Commission continues to develop and manage a multi-year capital plan for open space and recreation improvements, maintenance and new upgrades of facilities, but specific projects and progress are dependent on funding availability each year (Appendix C).

Electronic Communications and GIS Tools

A new Town systems manager and director of GIS (Adam Kurowski) is producing more and better GIS-based maps. See the Town-wide maps throughout this report and the site maps in chapter 5 for examples. The Town also enhanced its website in July 2014, making more information about resources and services, including maps, available to residents and other users.

Collaborative Planning for Open Space

There are many cases of Town boards and other organizations collaborating with the Open Space Committee, Park and Recreation Commission, and Conservation Commission on specific open space projects. For example, the Arlington Redevelopment Board worked with the developer of the former Brigham's site to enhance an adjacent park and areas along Mill Brook, and to use ecological designs for swales and plantings around the large new apartment building.

The Department of Public Works collaborates regularly with PRC and CC on maintenance and special projects on Town-owned properties. Many recreational projects and cleanup efforts at parks and trails have also received support for equipment and refreshments from town businesses including: local grocery and hardware stores, Bowes Realtors, Starbucks,

Dunkin' Donuts, Trader Joe's, Cambridge Savings Bank, the Fields Pond Foundation, and others.

The Workplace Program, an alternative high school program, has helped with volunteer maintenance efforts at several parks and open space areas, and students distribute the annual Spy Pond fertilizer flyer. In addition, arts programs offered at local parks seasonally have been supported by the Regent Theatre and the Arlington Cultural Council.

3-b. Work at the regional level to coordinate planning and development initiatives that protect and enhance open space across jurisdictions.

Coordinate with Regional Organizations and Nearby Towns

The Mystic River Watershed Association (MyRWA) sponsors many programs on watershed education, including removal of invasive plants, water quality testing, and seasonal monitoring of herring runs. Arlington provides office space to MyRWA at no charge at the Central School.

The ABC (Arlington, Belmont, Cambridge) Tri-Community group (created in 2002 and reauthorized in 2014) has been working to resolve flooding and CSO issues in the Alewife Brook and nearby areas.

Sustainable Arlington and other local groups and individuals have been working with Friends of Alewife Reservation, Coalition to Protect the Belmont Uplands, and other groups to prevent development of nearly 300 apartments in the Silver Maple forest, which is part of the flood-prone wetland area on the Belmont-Cambridge border, adjacent to Route 2 and East Arlington. In spite of years of work, the developer was authorized to begin clearing the area for construction in late 2014.

More positive activities in the Alewife Brook area include working with the state Department of Conservation and Recreation on construction of the Alewife Brook Greenway, a bicycle and pedestrian trail on DCR land in Arlington.

Several important open spaces are shared by Arlington and Lexington. Great Meadows, owned by Arlington but located entirely in East Lexington, is served by cooperative efforts of the Friends of Arlington's Great Meadows, Lexington's Conservation Commission, students of the nearby Waldorf School, and scouts in creating an informational signboard, boardwalk, and invasive plant removal efforts. ACROSS Lexington is a new project to mark and enhance walking trails throughout that town, and in cooperation with the Arlington Conservation Commission on Arlington land.



Arlington's Great Meadows next to the Minuteman Bikeway. Credit: David White

The Arlington Reservoir, also partly in Lexington, has experienced vegetative clearing and the deposition of yard debris from nearby residents. At the request of the Vision 2020 Reservoir Committee, Lexington Conservation Commission sent letters to Lexington abutters of the Reservoir to explain Arlington's ownership of the land around the Reservoir, and to discourage dumping and clearing of vegetation. Arlington is attempting to get Lexington to share the cost of water chestnut removal, but to date has not been successful.

When the former Busa Farm property adjacent to the Arlington Reservoir was sold by the Busa family and purchased by the Town of Lexington using Community Preservation Act funding, many Arlington residents and Town officials and organizations supported its continued use as a community farm. That effort was successful and most of the acreage is now managed as Lex Farm. However, Arlington is concerned about housing being planned on part of the land abutting the Reservoir due to storm drainage and runoff issues. Mutual discussions are continuing.

Regional Historic Connections

The Battle Road Scenic Byway links four towns – Arlington, Lexington, Lincoln, and Concord— through which the British regulars passed on April 19, 1775 at the beginning of the American Revolution. These towns, with Minute Man National Historical Park, the Massachusetts Department of Transportation, and the Metropolitan Area Planning Council, are collaborating to highlight the historic, cultural, recreational, scenic, and natural resources along this route. See section 2-c for more information.

3-c. Engage state officials and state and federal agencies in Town efforts to acquire, maintain, and manage space and recreation resources.

Community Preservation Act

The Community Preservation Act was enacted by the state in 2000 to enable cities and towns in Massachusetts to create a local dedicated fund for open space, historic preservation, affordable housing, and outdoor recreation projects. Cities and towns that adopt the act also receive funds from the statewide Community Preservation Trust Fund each year to help fund these projects. In spring 2014, Arlington Town Meeting voted to put adoption of CPA on the ballot in November, and the initiative passed by a 54 to 46 margin. All of Arlington's state legislators supported this effort. Next steps are for Town Meeting to appoint a local Community Preservation Committee which will administer the funds and recommend projects for approval in subsequent Town Meetings.

Goal 4. Increase public awareness, accessibility, and community stewardship of the Town's open spaces.

4-a. Support volunteer groups for major open spaces and recreational facilities.

Many volunteer Friends groups and informal committees have been established around specific sites, including Spy Pond Park, Arlington Reservoir, Robbins Farm Park, Menotomy Rocks Park, and many playgrounds (Waldo, Summer Street, North Union, and Greeley Park at Stratton School). A new Friends of Symmes Conservation Area was formed in 2014 to monitor the new conservation lands and parks at the former hospital site, now partially developed as the Arlington 360 housing complex and BrightView assisted living facility.

The Arlington Parks Alliance (APA), started in 2006 as Friends of Parks, continues to meet with representatives of the Park and Recreation Commission and Recreation Department to share concerns and plans for park maintenance and new ideas for fundraising strategies. The APA sponsored a Reservoir Beach Party in September 2014 as a fundraiser for the parks.

The Land Stewards program coordinated by the Conservation Commission has been reactivated under a new coordinator in 2014, with active members attending to Turkey Hill, Hill's Hill, Crusher Lot, Arlington's Great Meadows, and other sites.

DPW supports various Friends groups by providing trash pick-up for their clean-up efforts, and delivery of wood chips and other items for trail improvements. The recycling coordinator has established and publicized procedures for keeping compostable plant materials that are collected as yard waste separate from trash and invasive plants, which need to be destroyed.

School, scout, and other groups have also sponsored clean-ups on the Minuteman Bikeway and participated in other cleanups.



High School cross country team spreading wood chips on the Reservoir trail. Credit: Rachel James

4-b. Increase public awareness and educate Town residents about open space and recreational resources.

Develop Materials and Resources, Public Meetings

The Recreation Department prepares and distributes seasonal catalogues on all its programs, and posts information online, along with online registration for adult and children's programs.

Bulletin boards host information at many sites, including Menotomy Rocks Park, the Reservoir, Robbins Farm Park, Spy Pond Park, and Waldo Park.

Sustainable Arlington, the Arlington Garden Club, and the Department of Public Works have been cooperating since 2009 to organize an annual "EcoFest" which brings together information presented by groups promoting sustainable and energy efficient practices and vendors of appropriate products. Past topics have included water and food; the spring

2014 theme was “Rethink Recycling: Reduce, Reuse, Repurpose,” and one exhibit showed how broken pieces of curbstone were repurposed for erosion-preventing steps to the water’s edge at Spy Pond. The 2015 program will focus on energy awareness and related issues.

The Public Works Department has an active public education program on composting, rainwater storage, hazardous waste disposal, and stormwater awareness programs and presentations. The DPW makes compost bins and rainwater barrels available at a very reasonable cost. It also distributes to every household a schedule of recycling information.

Environmental Education Programs

Friends groups regularly conduct activities like nature walks and special educational events in their areas. For example, Friends of Spy Pond Park sponsors an annual Fun Day in collaboration with the Arlington Land Trust and the Arlington-Belmont Crew, which transports visitors to Elizabeth Island for guided tours by ALT members.

Organizations like the Mystic River Watershed Association (headquartered in Arlington) and Friends of Alewife Reservation also conduct activities which may take place wholly or partly in Arlington.

The Menotomy Bird Club, which was formed in 2003, sponsors seasonal birding trips and monthly lectures and maintains a very informative website. Lists of birds recorded in specific areas such as the Reservoir, Spy Pond, Great Meadows, and Menotomy Rocks Park have been compiled and printed. These lists are available at Town Day and are updated periodically as additional species are spotted.

Educate Landowners

The Arlington Land Trust works with private homeowners who are interested in protecting their land with a conservation restriction or easement to prevent future development. Several CRs are now in place on privately owned lots.

Adopt-an-Island and Streetscapes

The Arlington Garden Club works with support from the Town’s Department of Public Works and other entities to coordinate the adoption of street planters and islands by residents and businesses to beautify intersections and small public spaces. Around 60 areas are usually adopted due to the Club’s encouragement of citizen participation through publicity and offers of assistance on plant selection. Invited volunteer judges select winning sites each year.

The Club has maintained concrete planters at Broadway Plaza in Arlington Center in cooperation with the Chamber of Commerce for many years. In 2014-2015, a redesign program removed the planters and future plans include policy development on how nearby businesses and the public may use this space. Club members also designed and planted an authentic eighteenth-century herb garden at the historic Jason Russell House in 1975 for the Bicentennial celebrations, and they maintain it and another flower garden on the property. They have adopted several areas within the historic Civic Block, including the Town Hall Gardens, Whittemore Robbins House Garden, and planters around the Cyrus Dallin flagpole, and they maintain a demonstration rain garden at Spy Pond Park.

Town Day

Arlington’s annual Town Day is an important event for promoting awareness and information and all kinds of community activities. Groups like the Open Space Committee, Arlington Land Trust, and Conservation Commission have their own booths and hand out materials, and the Spy Pond and Reservoir Committees are featured prominently at the Vision 2020 booth. A number of Friends groups concerned with various parks and playgrounds, including the Friends of Spy Pond Park, Menotomy Rocks Park, Robbins Farm Park, and Great Meadows, also traditionally have their own Town Day booths.

Local and Regional Media

The Town’s website (www.arlingtonma.gov) was significantly upgraded in 2014 and includes information pages for the Open Space Committee

(including the current Open Space and Recreation Plan), Park and Recreation Commission, and Recreation Department activities, among many other resources and links to Friends groups and other committees. Recreation program sign-ups can be completed online.

The Open Space Committee, Park and Recreation Commission, Vision 2020 committees, and Conservation Commission hold regular monthly or bimonthly meetings that are announced on the Town website, and are open to the public. Minutes are available online and at the Robbins Library.

Regular articles and announcements about open space issues and events appear in the weekly *Arlington Advocate* (in print and online), on the Community Access Cable channel (ACMi), on the Town's website, and on the Arlington email list (arlington@arlingtonlist.org). In 2014, at the suggestion of the Open Space Committee, the *Advocate* published a series on "Hidden Gems" to highlight some of the Town's smaller and less known open spaces. The newspaper also ran a major story about the protection and public accessibility of Elizabeth Island in Spy Pond.

More specialized media are also used. For example, the newsletter of the Friends of Spy Pond Park is publishing a series of articles on various invasive plants that infest or are trying to infest the park.

4-c. Provide greater use of and improved access to key water bodies, natural areas, and recreational facilities.

Review Accessibility Concerns

Working with the Institute for Human Centered Design (IHCD), the Town conducted an Americans with Disabilities Act (ADA) study in 2014 focused on surveying the Park and Recreation sites and programs with the following goals:

- Provide an evaluation for the Town Recreation Department of services and programs to determine compliance with ADA regulations;

- Provide an evaluation of Town Park and Recreation Commission facilities, including buildings, playgrounds, fields and parks;
- Prepare a Self-Evaluation and Transition Plan that complies with the current ADA standards;
- Establish a grievance procedure and public notice that conforms to ADA/504 requirements;
- Provide the Town with a cost estimate for remediation work required as a result of the evaluations.

Increase Recreation Options for Varied Demographics

In addition to the many organized and pick-up sports activities, Arlington's parks and open spaces continued to provide the community with venues for a wide variety of recreational opportunities. Organized star gazing, movie nights, picnics, school fairs and field days, a fishing derby, Shakespeare performances, an arts festival, concerts, a tennis tournament, and "Spooky Walk" are some of the special events held.

Collaborations between the Recreation Dept. and other groups have resulted in recreational events such as the Town Day Road Race, Daddy Daughter Dance, Egg Hunt, Halloween and Special Winter Public Skate and a Special Needs Skate Program assisted by the Arlington Catholic High School Boys' & Girls' Hockey teams and their coaching staff.

New programs offered by the Recreation Department over the last several years have included: archery, futbol, Saturday Night Lights Flag Football, lacrosse for girls grades K-4, Lego classes, toddler art classes, Stroller Fit classes, Rock & Roll Babies, Special Needs soccer classes, volleyball clinics, Thundercats After School Sports program at three elementary schools, Middle School Ski Club, film making, game design, youth and adult golf classes, zumba and tai chi for adults, expanded adult tennis lessons, Fit Doggie and Me Training and the I Can Shine Learn to Bike program for youth with special needs.

Improve Access to Various Water Bodies

The Department of Conservation and Recreation (DCR) has built a boardwalk in part of the Alewife Reservation creating the Alewife Brook Greenway linkage from Alewife T Station to the Mystic Valley Parkway area, near the future extension of the Green Line subway into Medford. DCR also built a new dam and spillway area between Upper and Lower Mystic Lakes, though most access is on the Medford side. This has become an active site for watching Bald Eagles and many other permanent and migratory birds.

Mill Brook has become better known as a result of a 2010 report by an Open Space Committee study group that drew attention to areas along the brook that are Town-owned and publicly accessible. That report is also used by the Arlington Redevelopment Board and the Master Plan Advisory Committee as a basis for reevaluating both economic development potential and passive recreational opportunities along the Mill Brook corridor.



Granite steps built by volunteers at Spy Pond. Credit: L. Stroker Rogovin

Most of the land around Spy Pond is privately owned and not accessible to the public. Spy Pond Park on the north side of the pond and the pathway on the south side are accessible and widely used. The Spy Pond Committee has received help from the professional trail crew of the Appalachian Mountain Club as well as town residents for its annual Trails Days project of improvements on property under the jurisdiction of MassHighway along Route 2. The Town is continuing to work with MassHighway for the removal of runoff deposition of particulates at the Route 2 storm drain, which empties into Spy Pond.

In spite of substantial interest by residents, additional outdoor or indoor swimming facilities have not found sponsors or locations in Arlington. Currently the Reservoir Beach offers summertime outdoor swimming, and the private Arlington Boys and Girls Club has an indoor pool.

4-d. Support Arlington's efforts for a more environmentally sound Town and region.

Link Open Space and Sustainability Concerns

As part of the Green Communities program, the state awarded Arlington a \$247,894 grant aimed at implementing energy reduction initiatives in 2014. A total of \$7.9 million in grants to 43 communities across the Commonwealth were awarded in this latest round of the Green Communities Competitive Grants. This is the third Green Communities Grant awarded to Arlington with a cumulative total of \$698,000. This latest award will go toward energy improvement projects at the Ottoson Middle School and Arlington High School.

Town officials and representatives of Sustainable Arlington cooperate in an Energy Working Group which has made a number of efficiency improvements in the Town. In the beginning of 2013, the Town appointed its first Energy Manager under the direction of the Town Manager. The Energy Manager is charged with the task of finding new ways for the Town to reduce its energy costs and consumption as well as seeking out

alternative ways to fund these efforts through grants and other available funds. This part-time position is shared with the Town of Bedford.

A Town-wide recycling program has been in effect for many years. Recycling formerly was picked up every other week, but many residents asked for weekly pickup. This was accomplished in 2013 when the time came for the Town to negotiate a new contract for household waste and recycling hauling. Under this contract trash won't be picked up unless it is accompanied by some recycling. Recycling bins and trash containers are now located in selected parks during the outdoor recreation season.

DPW prepares and distributes an annual leaflet with recycling instructions and yard waste pickup dates, and offers compost bins at reasonable prices. A half-time Recycling Coordinator was hired in 2012. She has developed instructions for separating trash and noxious/invasive weeds from other plant material that is safe to compost. In addition, a volunteer Recycling Committee publishes periodic tips in the *Arlington Advocate* and on the Town website and Town email list, holds regular "community collection" days, and generally works to promote recycling in many ways.

The community education program at Arlington High School includes some classes every year on sustainable practices like composting.

Arlington participates in a hazardous waste collection program with neighboring towns. The collection site is in Lexington, with monthly drop-off dates in spring, summer, and fall. The DPW leaflet lists the dates and what materials will be accepted.

Public Transportation and Bicycle Commuting

The MBTA operates more than ten bus routes that travel through Arlington, connecting town residents to the Alewife T Station, Harvard Square, Burlington Mall, and other destinations outside of Arlington. In 2014 LEXpress expanded its service from Lexington into Arlington Heights. This bus allows users to get on or off where they wish on the designated

route, primarily along Mass Ave. Another form of public transportation, ZipCar, has offered pick-up and drop-off sites in Arlington since 2008.

The Arlington Bicycle Advisory Committee (ABAC) meets regularly to promote use of the Minuteman Bikeway for commuting and recreation, and to deal with other bicycle-related issues. For example, their efforts with the Town have led to a redesign plan for Arlington Center to improve safety and access for Bikeway users passing through the busy Mass Ave./Pleasant St. intersection. Bike lanes and sharrows have also been marked on many section of Mass Ave. and other major streets.

Since 2011, ABAC and the Town's Planning Department have participated in a statewide program that counts users of bikeways, trails, and paths. These Bikeway user surveys, held in May, July, and September from 7 am to 7 pm, count all types of users who pass through Arlington Center on designated dates, including weekdays and weekends. Data sheets track men, women, and children on bicycles, walking, skateboarding, or rollerblading. The statistics from these surveys are used for planning purposes and to determine changing needs and demands on the Bikeway.

Community Gardens

Community gardens have been established at Magnolia Field in East Arlington and Robbins Farm Park in the Heights. 2010 was the pilot year for the Robbins Farm Community/Educational Garden Project. This communal garden saw all participants work a single large plot at Robbins Farm Park and share the harvest, unlike the Magnolia Park Community Gardens where individuals work their own small plots. The Robbins Farm garden also provided an opportunity for gardening education for adults and children, including organized school trips. The Recreation Department administered the program, which was open to all residents, and after a successful first year, an expanded pilot was approved and has become a standard offering.

The Sustainable Arlington Committee has encouraged Arlington citizens to establish private gardens for their personal use. They have also espoused a program of eating food produced within 100 miles of one's home. This committee has provided information to Arlington citizens on the use of composting to help reduce the amount of garden and yard waste collected by Arlington's trash and recycling contractor.

A weekly Farmers Market brings fresh produce from surrounding farms to Arlington's Town Center parking lot on Wednesdays from late June through late October. The market is managed by a volunteer committee.



Farmer's Market Tomatoes. Photo by Lindsey Beyerstein

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3

Community Setting

A. Regional Context

Physical Location

The Town of Arlington is located in eastern Massachusetts and lies at the edge of the Boston Basin (a broad, flat, flood plain). Located about six miles northwest of Boston, Arlington's population of 42,844 (2010 U.S. Census) occupies five and one half square miles or 3,509.9 acres. Arlington is part of Middlesex County and the Boston metropolitan area; its neighboring communities are Lexington, Winchester, Medford, Somerville, Cambridge, and Belmont (see Map 3-1). The commercial corridors of Massachusetts Avenue and Broadway bisect the Town and connect it to Cambridge and Somerville on the east and Lexington on the west.

Arlington is a Town governed by a five-member Board of Selectmen, an elected legislative Town Meeting of 252 members, and an appointed Town Manager, similar in governance to the adjacent towns of Lexington, Winchester, and Belmont. Like the cities of Cambridge, Somerville, and Medford, Arlington is densely developed with a high level of population per square mile (see Population Characteristics, Section 3C, for statistics on regional population density).

Arlington residents' median family income is not as high as neighboring towns (Lexington, Winchester, Belmont), but is higher than neighboring cities (Cambridge, Somerville, Medford). More than 60 percent of Arlington residents over the age of 25 have at least a bachelor's degree,

and 35 percent hold a graduate or professional degree. Town residents work in both blue collar and professional occupations. As in Arlington's surrounding communities, the Town has a large segment of aging people and a growing segment of couples with young children.

Map 3-1. Arlington and Surrounding Communities



Source: Town of Arlington Open Space and Recreation Plan 2007-2012.

Community Development

Many factors have shaped Arlington's natural and recreational open space as the Town developed from a small farming community in the colonial period to the densely developed suburban community it is today (see Maps 3-2, 3-3, and 3-4). The biggest influence on Arlington's development

has been the growth of metropolitan Boston. The Town's close proximity to Boston and Cambridge, and to many colleges and universities in the region, makes it an ideal residential community for people affiliated with academia, financial institutions, high-tech and bio-tech industries, and other regional employment sectors.

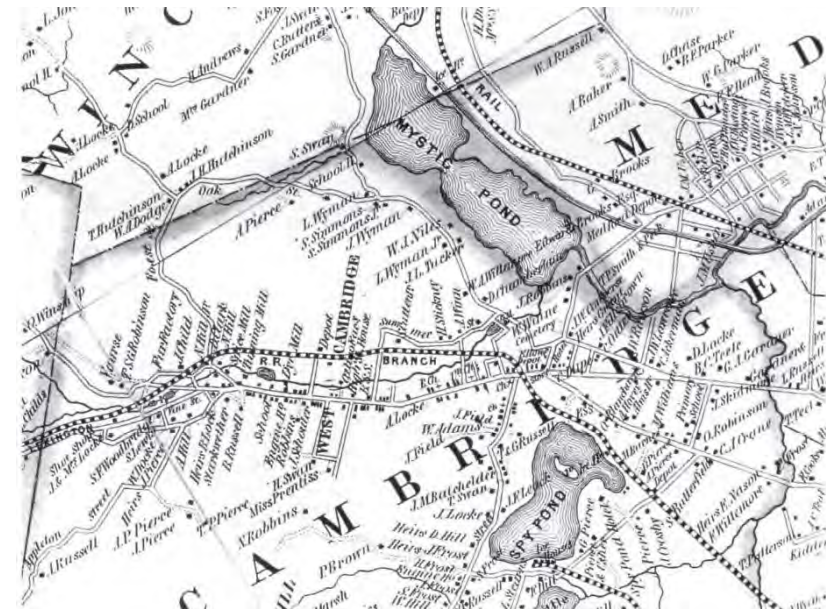
The character of Arlington's once rural community began to change in 1846 when the Lexington and West Cambridge Railroad opened to Arlington, allowing more residents to work outside of Town (Neckar and Zellie 1980). The continued growth of transportation options accelerated this change of life for Arlington residents and the change of character for the Town's landscape. As Boston grew, the pressure for the development of residential building lots within commuting distance grew as well. Over time, Arlington became less "country-like" and more "suburb-like" in character.

Map 3-2. Arlington (then West Cambridge) in 1830



Source: Neckar and Zellie 1980, 12.

Map 3-3. Arlington (then West Cambridge) in 1853



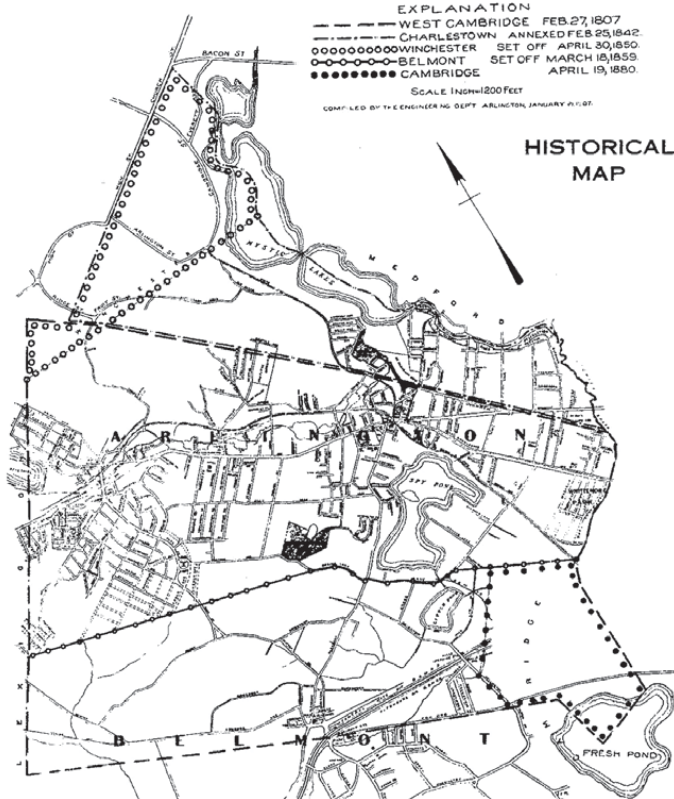
Source: Neckar and Zellie 1980, 13.

Arlington Land Uses

Residential Land Use

The majority of Arlington's land use is residential—approximately 72 percent of the total land area of the Town as reported in the 2015 Arlington Master Plan land use element. Arlington is a safe and convenient place to live for people who may work in nearby cities but wish to live in a town with a more suburban character. The majority of Arlington homes are situated on small lots ranging in size from 3,500 to 9,000 square feet. These small residential lots and a relatively small amount of open space (approximately 448 acres, including both public and private land, or about 13 percent of the land within Town borders) are two of the important factors driving Arlington's need to preserve, protect, and nurture its limited open space.

Map 3-4. Arlington in 1907



Source: Neckar and Zellie 1980, 9. This map shows how Arlington's boundaries have changed over the years.

Transportation and Commercial Land Uses

Many major roads (Massachusetts Avenue and Routes 2, 2A, 3A, 16 and 60) pass through Arlington, linking residents with neighboring towns, Boston, Cambridge, and nearby highways (Interstates 93 and 95). During peak commuting hours these roads are highly congested. Public bus transportation also traverses Arlington, carrying commuters to regional destinations. Many of the roadways that pass through Arlington border the

Town's water bodies (for instance, Route 2 borders Spy Pond on the south, Route 16 borders Alewife Brook, and Mystic Valley Parkway borders the Mystic Lakes and Mystic River), thereby putting constraints on the use of open space abutting them. While these roadways provide many scenic views for the traveling public, their presence contributes to pollution of these waters.

Arlington does not have any major shopping malls or superstores to draw in large numbers of customers from surrounding towns. The Town's three commercial centers (East Arlington, Arlington Center, and Arlington Heights) feature small specialty stores, theaters, and restaurants frequented by residents and nonresidents. Traffic around these shopping areas and businesses (the majority of which are located along Massachusetts Avenue) is usually manageable, although residents frequently comment on the need for additional parking. Traffic around Arlington's more popular recreational resources presents additional seasonal problems.

Public Open Space Land Uses

Arlington has a number of relatively small open spaces that add to its character and beauty. Both residents and nonresidents enjoy Arlington's open space destinations and are invited to register for Arlington's recreational activities and programs. Arlington's largest and most popular open space destinations are described here (see chapter 5 for a complete inventory and additional information).

- Arlington Reservoir** combines a water body of 29 acres and land totaling 65 acres, including woods, open areas, and a sandy beach. More than half of this site is located in Lexington. The Reservoir is frequented by many visitors, particularly in the summer, because of its beach and supervised swimming area. A one-mile wooded path around the Reservoir is used regularly by walkers, joggers, bird watchers, and others who seek a quiet place to enjoy the outdoors close to home.

- **Great Meadows** (located in Lexington, but owned by Arlington) is a 183-acre area with a significant amount of wetlands and wet meadows. Several entrances are available from the Minuteman Bikeway, and boardwalks have been built by volunteers in recent years to make the trails more accessible. Residents of Arlington and neighboring town often visit Great Meadows to observe the diverse flora and fauna, to cross-country ski, or to use the trails for walking and bird watching.
- **Menotomy Rocks Park**, established in 1896, includes Hill's Pond and a playground, as well as wooded areas boasting many plant and wildlife species. Visitors use the 35-acre park for ice skating, picnicking, walking, jogging, ball playing, birding, and relaxing. The park is also known for its spectacular glacial ledges.
- **Robbins Farm Park** contains 11 acres of recreation areas, open space, and a community garden. In the summer, visitors use the playground area, ball field, basketball court, and grassy areas; in the winter, visitors use the area for sledding and cross-country skiing. The site atop a steep slope provides a panoramic view of Boston's skyline and is a wonderful spot for viewing the nighttime starry sky and the Fourth of July fireworks in Boston.
- **Spy Pond and adjacent Spy Pond Park** are popular destinations for families with young children, sunbathers, boaters, birders, and anglers. The 100-acre pond provides tranquil respite for people of all ages; however, the lack of a walking trail around the entire pond limits public access. Spy Pond Park borders the pond and the Minuteman Bikeway, and contains 3.7 acres of grassy recreation area, including a tot lot and boat launching ramp. The Spy Pond Path traverses the south edge of the pond next to Route 2. The nearly two-acre Elizabeth Island was purchased by the Arlington Land Trust in 2010 as permanent conservation land. It is accessible to the public via small boats that are permitted on the pond.

- **Historic sites and landscapes** in Arlington attract out-of-town tourists and local people alike. Several notable sites are the Jason Russell House and Smith Museum, the Samuel Wilson ("Uncle Sam") monument, the Old Schwamb Mill, the Whittemore-Robbins House and adjacent gardens in the Civic Block, and the Cyrus Dallin Art Museum in the historic Jefferson Cutter House.

Open Space Resources Shared with Other Towns

Arlington shares a few important and unique resources with neighboring towns, and is actively engaged in regional planning efforts to preserve, protect, and enhance those areas.

- **Minuteman Bikeway** — This rail/trail conversion was dedicated in 1992. The 11-mile paved bike trail runs from Bedford in the west through Lexington and Arlington, terminating at Cambridge's Alewife T (MBTA) Station. The Arlington section is called the Donald Marquis/Minuteman Bikeway in honor of the retired long-time town manager. Built over an abandoned railroad corridor, the bikeway abuts a mix of commercial and industrial land uses and connects them to many residential neighborhoods and open space parcels.
The future may include more opportunities for linkages between the Minuteman Bikeway and bikeways in adjacent communities. Neighboring communities of Watertown and Belmont are also working to create bikeways that would link to the Minuteman Bikeway and other communities to the West. The state Department of Conservation and Recreation's master plan for the Alewife corridor included a path extension from the Alewife T Station along Alewife Brook Parkway with a connection the proposed Green Line T Station in West Medford. This Alewife Brook Greenway Path was completed in 2013.
- **Water Bodies** — Arlington shares several water bodies with neighboring communities. Alewife Brook on the eastern side of Town

creates borders with Belmont, Cambridge, and Somerville. It flows into the Mystic River, which then passes through Medford, and Somerville on its way to Boston Harbor. The Mystic Lakes border Arlington, Medford, and Winchester. Alewife Brook, Mystic River, the Mystic Lakes, and adjacent green space are all owned and controlled by the Department of Conservation and Recreation (DCR), formerly the Metropolitan District Commission (MDC). On the western edge of Town, the Arlington and Lexington border runs about midway through the Arlington Reservoir.

- **Parkways** — Multiple highways and roads (Routes 2, 2A, 3A, 16, and 60) pass through Arlington. Alewife Brook Parkway (Route 16) and the Mystic Valley Parkway offer particularly scenic and open space value. These two roadways are owned and controlled by the DCR and are shared with surrounding Cambridge, Somerville, and Medford. Planned over 100 years ago as part of Charles Eliot’s plan for the Boston metropolitan area, these parkways were designed as carriageways that would provide scenic views to the traveling public. Besides serving as transportation corridors, these parkways provide a buffer area between land uses.
- **Additional Open Space Resources** — The following open space resources are among those located in neighboring towns that are also enjoyed by Arlington residents:
 - Beaver Brook Reservation (DCR) in Belmont and Waltham
 - Habitat, a Massachusetts Audubon Society sanctuary in Belmont
 - Rock Meadow in Belmont (town conservation land that was part of the former Metropolitan State Hospital Complex)
 - The Western Greenway traversing numerous public and private properties in Belmont, Waltham, and Lexington
 - Fresh Pond, Mt. Auburn Cemetery, and the Charles River in Cambridge

- Alewife Reservation (DCR) in Cambridge, bordering Belmont and Arlington
- Great Meadows in Lexington (owned by Arlington)
- Whipple Hill, Willard Woods, and other conservation lands in Lexington
- Middlesex Fells (DCR) in Winchester, Medford, Melrose and Stoneham
- Dilboy Field in Somerville, offering a stadium, other sports fields, playgrounds, and walking trails

Regional Planning Efforts

Arlington is a member of the Metropolitan Area Planning Council (MAPC), a regional planning agency that serves 101 towns and cities in Greater Boston. The Town participates actively in MAPC planning activities, such as the Inner Core Committee (which includes representatives of communities close to Boston who meet regularly to discuss common interests, such as open space).

Arlington consults the Statewide Comprehensive Outdoor Recreation Plan (SCORP) in its open space planning. The Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) produces the SCORP, which documents the available recreational resources across the state.¹ It also documents problems in providing recreation access and protecting resources. The relevant portions of the most recent Massachusetts SCORP (2012) are summarized in chapter 7.

Increasing development pressures in the Alewife region around the Route 2 rotary at the MBTA station and more frequent flooding and traffic congestion in East Arlington in recent years have caused growing concerns and activism. One of the major groups in the area is the Friends of Alewife Reservation, which is dedicated to the protection and preservation of the

¹ Massachusetts Executive Office of Energy and Environmental Affairs, Massachusetts Statewide Comprehensive Outdoor Recreation Plan, 2012, p. 1

water quality and wildlife habitat of that state-owned land in the adjacent communities of Arlington, Belmont, and Cambridge.

The Coalition to Preserve the Belmont Uplands has also worked hard to preserve the Silver Maple Forest in Belmont. A long-standing controversy with the developer of a proposed chapter 40B residential development came to a head in the summer of 2014, when most of the forested area was cleared in preparation for the development. Local residents in all three communities are concerned about the loss of land in this ecologically sensitive area and its role in providing water absorption and flood prevention, habitats for many varieties of animals, an outdoor oasis for area residents, and an environment in which the largest Silver Maple Forest in the Boston area can thrive.

To further address water pollution and flooding issues in and around Alewife Brook, the Tri-Community Flood Group for Arlington, Belmont, and Cambridge includes town engineers, elected officials, and concerned neighbors and volunteers. Among the issues the group discusses are the combined sewer overflows (CSOs) that enter the brook from Cambridge and Somerville after heavy rains.

The Mystic River Watershed Association (MyRWA) works to protect the Mystic River watershed area, including Alewife Brook, Mill Brook, and the Mystic River and Lakes. It sponsors a variety of water quality monitoring programs and offers educational and outreach opportunities throughout the year. MyRWA's members represent Arlington, Belmont, Cambridge, Medford, Somerville, Lexington, Winchester and Woburn. The river and much of the land along the waterway is managed by the state Department of Conservation and Recreation, which is undertaking a master plan for the area. MyRWA headquarters are located in the former Central School next to Town Hall in Arlington.

B. History of the Community

Menotomy: Pre-Colonial Era

The Massachuset Tribe

When the first English colonists arrived in the Boston area, the only inhabitants of the region were members of the Massachuset tribe. The Massachuset occupied valleys of the Charles and Neponset rivers in eastern Massachusetts, including the present site of Arlington, which they called Menotomy (meaning "place of swiftly running water"). The name Massachuset means "at the range of hills," probably with reference to the ring of hills surrounding the Boston Basin created during the last ice age.

The Massachuset tribe spoke what linguists call the Algonquian N-dialect. The same dialect was spoken by the neighboring Narragansett, Nauset, Niantic and Wampanoag. Algonquian (or Algonquin) is the name used for the largest pre-colonial language group in North America. Some evidence of the migrations of ancestors of the Massachuset tribe lies in the fact that Algonquian dialects are spoken from Montana to Massachusetts by the Arapaho, Cheyenne, Gros Ventres, Blackfoot, Cree, Ojibwe, Ottawa, Potawatomi, and numerous tribes along the Atlantic coast from Hudson Bay to South Carolina.

In 1614, when Captain John Smith explored the coast of New England, there may have been as many as 3,000 Massachuset living in 20 villages around Boston Bay. They were divided into six sub-tribes named after their chiefs or sachems. Between 1614 and 1617, disaster struck in the form of three separate epidemics of European diseases. During the same period, the Abenaki tribe from the north attacked the Massachuset villages. In 1620 the Pilgrims found that most of the Massachuset villages in the region were empty and only recently abandoned. When the first Puritans settled at Boston in 1629, only 500 Massachuset were left in the immediate area, and smallpox killed many of these in 1633. No organized groups of the Massachuset are known to have survived after 1800.

The Massachuset are memorialized in Arlington today by "The Menotomy Indian Hunter," a sculpture by Cyrus Dallin located in the Winfield Robbins Memorial Garden next to the Town Hall.

The Squaw Sachem

The hereditary chief of the sub-tribe that occupied Menotomy was a woman whose full name is unknown. She is known by her title, Squaw Sachem, and she was married to Nanapeshemet (or the New Moon), one of the greatest sachems in New England, ruling over a larger area than any other. He resided in what is now the city of Lynn until the war with the Abenaki (aka Tarratines), which began in 1615. He then retreated to a hill on the banks of the Mystic River (in Medford), where he built a house and fortified himself. The Abenaki pursued him to his retreat and killed him in 1619. At his death, his widow became sachem because his sons were too young to rule. After about a decade, however, the two eldest sons were old enough that the English recognized them as chiefs in Charlestown and Saugus. They both died in 1633, so again there was no sachem. The settlers' deeds were executed with the Squaw Sachem. In some of those documents, her name is joined with that of her second husband, Web Cowet, a "great physician," whom she married before 1635.

The Squaw Sachem conducted raids against tribes that tried to encroach on her territory. These raids ceased after 1625, because her tribe had gotten too small for such aggressive action. To survive, she had to establish a friendly relationship with the English colonists. Following is the text of the agreement by which she sold Menotomy and adjacent land to the colonists.

" The 15th of the 2d mo.,1639.

Wee Web-Cowet and Squaw Sachem do sell vnto the Inhabitants of the Towne of Charlestowne, all the land within the line granted them by the court, (excepting the farmes and the ground, on the west of the two great Ponds called Misticke ponds, from the south side of Mr. Nowell's lott, neere the vpper end of the Ponds, vnto the little runnet that cometh from Capt. Cook's mills, which the

Squaw reserveth to their vse, for her life, for the Indians to to plant and hunt vpon, and the weare above the pons, they also reserve for the Indians to fish at whiles the Squaw liveth, and after the death of Squaw Sachem, she doth leave all her lands from Mr. Mayhue's house to neere Salem to the present Governor, Mr. John Winthrop, Sen'r, Mr. Increase Nowell, Mr. John Wilson, Mr. Edward Gibbons to dispose of, and all Indians to depart, and for sattisfactio from Charlestowne, wee acknowledge to have received in full sattisfaction, twenty and one coates, ninten fathom of wampom, and three bushels of corne: In witness wherof we have here vnto sett o'r hands the day and yeare above named. the marke of Squaw Sachem, the marke of Web Cowet."

There are records of several other sales of land by the Squaw Sachem and Web Cowet to the English settlers. In addition to the proceeds from such sales, they received help and goods from the settlers. In May 1640, Cambridge was ordered to give the Squaw Sachem a coat every winter for life. In 1641, Cambridge was enjoined to give her 35 bushels of corn and four coats (for two years). In 1643, the court granted her gunpowder and shot and ordered "her piece to be mended." The Squaw Sachem died circa 1667. She was buried in what is now Medford; the exact location is unknown.

Post-Colonial Era

When first settled by the English around 1635, Arlington was known as Menotomy and was part of Cambridge. Almost 200 years later, in 1807, Arlington was incorporated as West Cambridge. In 1850 a part of West Cambridge was annexed to Winchester and in 1856 another part of West Cambridge was separated to create Belmont. Arlington adopted its present name in 1867 to honor civil war veterans buried at Arlington National Cemetery in Arlington, Virginia.

In Arlington's early colonial years, industry and agriculture thrived. Gristmills for corn and wheat, sawmills, ice harvesting, dairying and market gardening provided work for Town residents. Small family-owned mills along Mill Brook and its series of millponds also powered shoemaking,

calico printing, woodturning, paint grinding, and other industries. The industrial and agricultural nature of the community began to change with transportation improvements, notably the construction of a railroad in 1846 and later the use of electric streetcars (Neckar and Zellie 1980).

The historic Old Schwamb Mill on Mill Lane reflects the changing character and economic foundation of the Town over time (Old Schwamb Mill 1993). The mill was established in 1650 at the Foot of the Rocks as a gristmill and saw mill, where water-powered millstones ground grains and spices and where logs were sawn into planks. In 1864 Charles Schwamb, a German immigrant woodworker, and his partner converted the mill into a woodworking shop for the manufacture of high-quality oval and circular picture frames and picture frame moldings. The business thrived for 105 years, until the late 1960s, when cheap imports and other technologies reduced demand for high-quality wooden frames. The mill was protected by a group of Arlington preservationists and established as a working museum in 1969.

By the late 1800s, the Town's character changed dramatically, as Arlington became part of the greater Boston metropolitan area, both economically and socially. Civic and state leaders became aware of the need to preserve the Town's open space, and in 1896 land was assembled to create the Town-owned Menotomy Rocks Park (Mattheisen 1996). As the twentieth century progressed, however, the development of businesses, new homes and road construction began depleting more and more of the Town's land (Neckar and Zellie 1980). The post-World War II home-building boom was significant in some lowland areas of the Town that previously had been preserved in farmland and floodplains.

Until 1972, when Arlington put a development moratorium on building permits, commercial and residential development boomed. In 1975, after overhauling many of its zoning bylaws, the Town adopted a modified set to better regulate development. The 1975 zoning bylaws did not save much open space, however, because the Town had little open space left to save by that time. The effect of this intense history of development remains visible in Arlington today.

C. Population Characteristics

Understanding Arlington's population characteristics and recent trends is essential so the Town can maximize the appropriate use of its open space resources and plan for the future. The following discussion provides statistical demographics and then analyzes how Arlington's open space planning can respond to those demographics.

Unless otherwise noted, the 2010 U.S. Census provides the demographic statistics referenced in this subsection. Though collected five years ago, these data continue to be the most up-to-date and reliable that exist currently. The 2010 Census documents 42,844 residents in Arlington. This represents a small gain since 2000, when the population was 42,389. The 2010 population statistics show that the majority of Arlington's population is between 20 and 64 years of age. In general, the age ranges of under 14 years old and 55-64 have shown increases and the rest of the age cohorts have shown various levels of decline. Overall, Arlington is seeing an aging population where the median age is 41.7 in 2010 compared to 37 in 1990 and 39.5 in 2000. Arlington is also more diverse now, showing increases in the number of African American, Asian and Hispanic residents. These minorities are about 15 percent of the population, and 57 percent of that group is Asian. The Town's 18,969 households have declined slightly in number from 19,011 in 2000 but increased slightly in size from 2.22 to 2.24 occupants since 2000.

As recorded in the 2010 Census, Arlington's 5.5 square miles (5.2 sq. mi. in land, .3 sq. mi. in water) were populated with 42,844 people, presenting a population density of about 7,790 persons per square mile—far more than 2,082 persons per square mile, which is the average population density of other MAPC member communities. With the exception of Lexington, the cities and towns abutting Arlington also have a relatively high population density average, indicating that abundant open space resources for Arlington residents are not available nearby. More evidence of Arlington's densely settled residential character is the relatively small size of its average house lot (6,800 square feet). Small house lots mean that residents may not have ample yard space for recreation and may need to

use Town-owned resources. The results of the 2014 Vision 2020 Open Space Survey indicated that residents desire more natural open space areas, swimming and ice skating facilities, off-leash dog walking areas, and community garden space (see Appendix B).

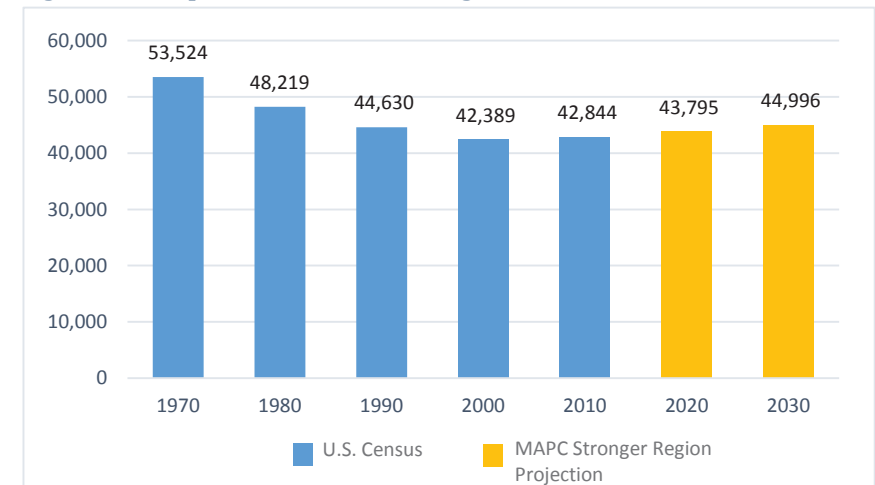
Population Statistics

Many sources offer population data and projections. This section uses information from the 2010 U.S. Census, the Metropolitan Area Planning Council (MAPC), and the University of Massachusetts-based Institute for Social and Economic Research (MISER). The following population data and projections represent our best understanding of current population configurations and estimates.

Arlington's Current and Projected Population

As mentioned, the 2010 U.S. Census reported that Arlington had a population of 42,844 persons. Figure 3-1 shows that Arlington's population has declined from a peak of more than 53,000 in 1970 to 42,389 in 2000. This loss of population is related to such national trends as declining birth rate, aging population, and smaller household size. However the 2010 U.S. Census indicated a slight population gain of 455 people between 2000 and 2010. Furthermore, according to the Metro Boston Population and Housing Demand Projections conducted by MAPC in 2014, Arlington will continue to expect a growing population through 2030 under the Stronger Region scenario². Arlington is projected to have a population of nearly 45,000 by 2030.

Figure 3-1. Population Trends, Arlington, 1970-2030



Source: U.S. Census and MAPC. Metro Boston Population and Housing Demand Projections, 2014 (<http://www.mapc.org>).

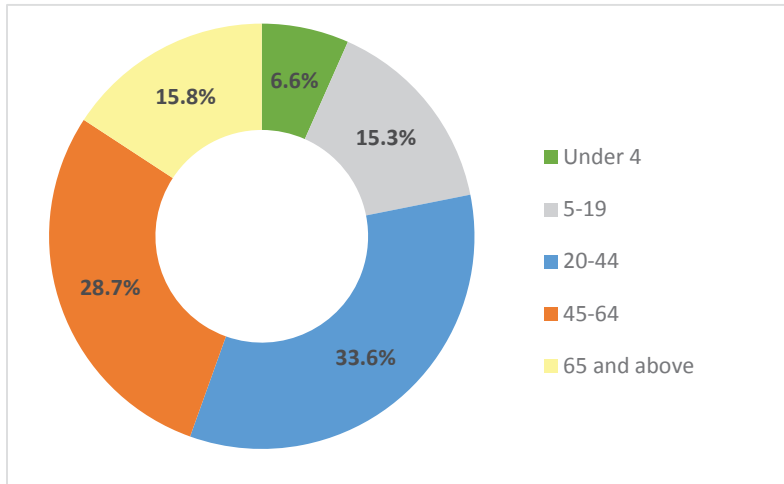
Age Distribution of Arlington Residents

Change in the size of Arlington's population is one of the factors causing changes in the age composition of its residents. Figure 3-2a indicates the 2010 age composition for Arlington residents while Figure 3-2b shows the change of age composition between 2000 and 2010.

² MAPC projections include two scenarios for regional growth. Each scenario reflects different assumptions about key trends. The "Status Quo" scenario is based on the continuation of existing rates of births, deaths, migration, and housing occupancy. Alternatively, the "Stronger Region" scenario explores how

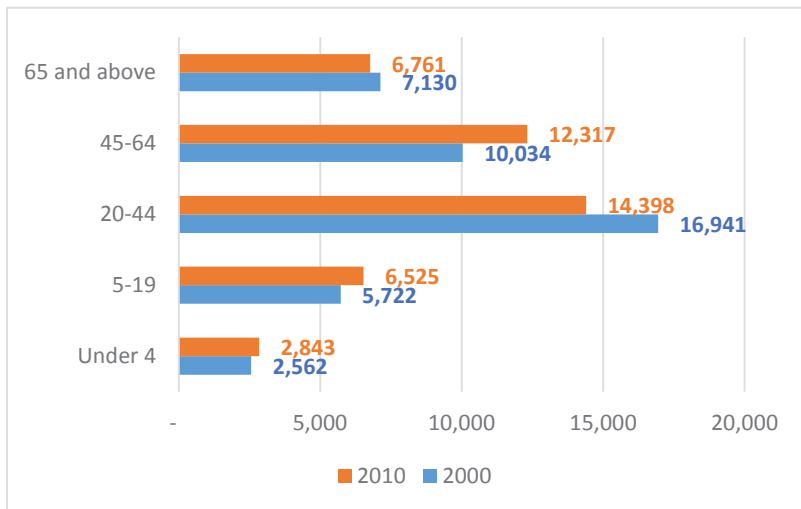
changing trends could result in higher population growth, greater housing demand, and a substantially larger workforce. The "Stronger Region" scenario is considered in this study as more comprehensive and dynamic, and therefore is used for demographic trend analysis.

Figure 3-2a. Age Distribution of Arlington Residents, 2010



Source: U.S. Census.

Figure 3-2b. Change of Age Distribution of Arlington Residents, 2000 and 2010



Source: U.S. Census.

The 2010 population statistics show that the majority of Arlington's population is between 20 and 64 years of age. In general, Arlington has seen slight population growth from infant and young children under 5 years to young adult under 20 years over the decade. The most significant population increase occurred among people between 45-64 years (the Baby Boomers) from 2000 to 2010. Yet the adult population ages 20 to 44 declined significantly in Arlington during the same period, in addition to a slight decrease in elderly population above 65 years. However, given the significant increase in the 45-64 year old population, the Town can expect that the elderly population is likely to increase dramatically between now and 2030. Overall, Arlington is seeing an aging population where median age is 41.7 in 2010 compared to 37 in 1990 and 39.5 in 2000.

Employment Characteristics

Arlington's residents are predominantly employed in white-collar managerial, professional, or technical jobs. Among Arlington's 23,733 civilian employed population 16 years and over in 2010, nearly 64 percent have management, business, science, and arts occupations. More than 21 percent of the Town's employed residents work in sales and office related industries, and nearly 9 percent are employed in the service sector.

The number of people working in jobs requiring manual labor, such as construction, maintenance, production, transportation and material moving, has been declining since 1970, and they together account for 6.4 percent of Arlington's employed population in 2010. Although Arlington has lost most of its industrial and manufacturing employers, the Town has a growing service sector, including retail, medical and information technology, and restaurants and food-related services. While the majority of Arlington residents work outside of the Town, a growing number of residents have home offices in Arlington.

Perhaps because of Arlington's proximity to many Boston and Cambridge-area universities and colleges, the Town is also home to many people associated with higher education, such as teachers, professors, graduate students, and staff. Also, due to Arlington's close location to Boston, Cambridge, and Routes 2, 93, and 128, the Town is an ideal place for

entrepreneurs and technology-based small businesses, many of which start as "kitchen-table" enterprises and provide employment on a part-time or small-scale basis.

Income Characteristics

A comparison of 1999 U.S. Census data and 2010 ACS 5-Year Estimates are used for income characteristics analysis. The figures in Table 3-1 show increases of income for all households including family and nonfamily households, at a growth rate of respectively 34 percent and 36 percent between 1999 and 2010. Overall, Arlington's median household income exceeded that of Middlesex County and the state as a whole. Approximately 39 percent of all Arlington households had annual incomes over \$100,000 in 2010, including families and nonfamilies.

Despite Arlington's relatively low poverty rates in the Boston Metro area, approximately 4.9 percent of Arlington's population is determined as living below the poverty level. Approximately 25.5 percent of households receive Social Security income in 2010, with another 6.6 percent receiving Supplemental Security Income, public assistance income, or Food Stamp/SNAP assistance.

Environmental Justice Populations

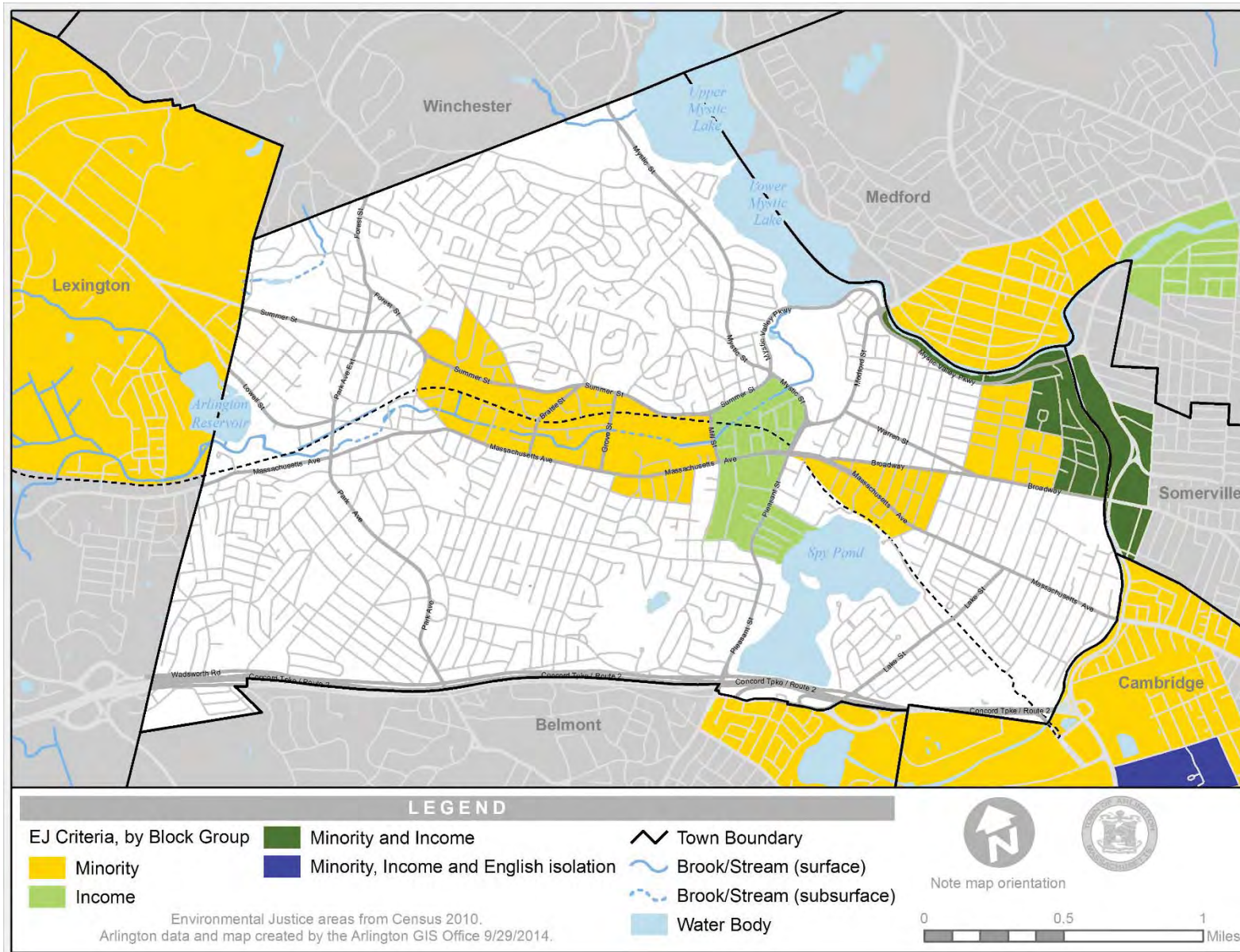
According to MassGIS data, Arlington has five environmental justice areas, including a minority area north of Massachusetts Ave. in the central part of town, and another one in the neighborhood where Massachusetts Ave. and Broadway intersect east of Arlington Center. There is an income-based area west of Pleasant Street on both sides of Massachusetts Ave. All three of these areas are bisected by or adjacent to both the Minuteman Bikeway and the Mill Brook corridor and two of them abut Spy Pond. In East Arlington, north of Massachusetts Ave., there is a minority area and a minority/income based area (see Map 3-5).

Table 3-1. Median Income in Arlington and Middlesex County, 1999 and 2010

	1999			2010		
	Arlington	Middlesex County	MA	Arlington	Middlesex County	MA
Median family income (persons living in a household who are related by birth, marriage, or adoption)	\$78,741	\$74,194	\$61,664	\$105,316	\$97,382	\$81,165
Median non-family household income (persons living in a household who are not related by birth, marriage, or adoption)	\$42,269	\$36,954	\$29,774	\$57,656	\$46,680	\$37,606
Median household income (avg. of both family and non-family households)	\$64,344	\$60,821	\$50,502	\$82,771	\$77,377	\$64,509

Source: U.S. Census.

Map 3-5. Environmental Justice Population in Arlington



People with Disabilities

In 2012, about 3,600 Arlington residents (or approximately 8.5 percent of the total population of over 42,000) had some sort of mobility and/or self-care limitations; approximately 1,752 people with disability, or 26 percent of the total population, are 65 years and over (American Community Survey 2008-2012).

Population Impacts on Open Space Needs

The following discussion is based on Arlington's population demographics and is not a final open space needs analysis. Refer to chapters 6, 7, 8 and 9 for analysis and detail on the Town's open space goals, needs, objectives, and actions.

Senior Citizens' Needs

Arlington residents over the age of 65 comprise about 16 percent of the population in 2010, a slight decrease from 17 percent in 2000. Arlington will need to continue planning for the open space needs of senior citizens and increasing their access to open space. Some senior residents in Arlington live on limited or fixed incomes; thus, while many Town residents can travel out of town for their recreational needs and enjoy sports requiring expensive equipment or large amounts of open space, many senior citizen residents need open space and recreation resources that are easily accessible by walking or public transportation in all seasons. For example, over the past several years the Town has contracted for the Minuteman Bikeway to be plowed after snowstorms, for both bicycle commuters and pedestrians.

Also, although there are a number of indoor facilities and programs for senior citizens, they need more programmed outdoor activities, especially as seniors remain stronger and healthier longer than in the past. Areas for passive recreation, such as walking, picnicking and bird watching, and events for the elderly, such as sightseeing tours, are popular with the over 65 group and should be made more easily accessible and available to them. Installing benches and establishing rest areas at recreational areas, commercial pedestrian spaces and local neighborhood parks may help to

make some open spaces more accessible to the elderly. For example, a new multi-generational park with bocce court and game tables was built as part of renovations around the Summer Street Sports Complex in 2011.

Adults' Needs

Arlington residents between the ages of 20 and 44 comprised 33.6 percent of Arlington's population in 2010, and those between the ages of 45 and 64 accounted for 28.7 percent, totaling over 62 percent of the population. Although the 20-44 age group is projected to decline, the 45-64 group will increase. Thus the adult population, not including senior citizens, will likely be about 60 percent. These residents need active recreational facilities and resources for ball sports and biking, and passive recreation resources to enjoy activities such as picnicking and watching wildlife.

Toddlers', Children's and Teens' Needs

Toddlers, children and teens (ages 0-19) make up almost 22 percent of Arlington's population according to the 2010 U.S. Census, up from 20 percent in 2000. Arlington has limited park and recreation space for the number of young people in Town, and existing spaces are not evenly distributed throughout the neighborhoods. The household demographic trend points to a continued need for parks and play areas for very young children, including ample access to Spy Pond, the Reservoir, and other waterways for walking and observing wildlife. The Town is experiencing increased demands for playing fields for soccer, baseball, lacrosse and football by both boys' and girls' teams at Arlington High School and Arlington Catholic High School, as well as growing demands by league sports, especially soccer and baseball, for youngsters of all ages.

People with Disabilities' Needs

Almost 8.5 percent of Arlington's population has some kind of mobility or self-care limitation (American Community Survey 2008-2012) and the Town will continue to increase the amount of open spaces accessible to people with disabilities, particularly parks, playgrounds, and passive recreation areas.

Under the national Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, the Town has an obligation to plan for people with disabilities to participate in all aspects of Town government (see Appendix D). In 2014 the Town and the Institute for Human Centered Design (IHDC) completed an ADA study that focused on parks and recreational sites and programs (see Appendix E).

Arlington makes it a point to ensure the inclusion of people of all ages and abilities in Town open space activities. For instance, people with disabilities are explicitly invited (in the Town's seasonal recreation pamphlet) to participate in Arlington Recreation Department activities and programs. Furthermore, the Park and Recreation Commission assures accessibility for people with disabilities in all of its renovation and expansion plans. And, as part of new capital investments, Town policy is to upgrade its open space facilities to national accessibility standards for people with disabilities.

Cross-age Group Needs

Arlington needs to better maintain its parks, playgrounds, and team playing fields for the recreational enjoyment of Arlington residents of all ages. The Park and Recreation Commission regularly assesses the needs for improving the Town's recreational facilities and has developed a multi-year capital planning process for scheduling park and playground renovations.

Low-income Family Needs

While Arlington is primarily a middle-income community, approximately 4.9 percent of the population is determined as living below the poverty level. Approximately 25.5 percent of all households in Arlington received Social Security income in 2010, with another 6.6 percent receiving Supplemental Security Income, public assistance income or Food Stamp/SNAP assistance. Thus, despite the increase in average household income, the Town still needs to address the percentage of its population that cannot afford to spend time and money to access recreation, especially programs requiring payment of fees.

The Arlington Boys and Girls Club, Fidelity House, Boy and Girl Scouts, and various church groups, sports leagues and clubs offer their recreation

programs to all residents, regardless of income level. Community Development Block Grant (CDBG) funds help to subsidize scholarships for these programs. Many private groups also offer assistance (through scholarships and other methods) to people in need. Arlington will continue to support these recreation programs and consider the open space needs of its low-income population.

Summary of Needs

User needs for and concerns about access to open space and recreational facilities for all ages have persisted in recent years. Demands on parks, playgrounds, and playing fields for youth and adult activities are recognized throughout the Town. Volunteer neighborhood groups have worked with the Park and Recreation Commission to organize tot lots and playground renovations in several areas. The proliferation of Friends groups to support parks such as Menotomy Rocks, Robbins Farm, and Spy Pond also illustrates the need and desire of citizens to be directly involved in their neighborhood open space resources, and to supplement Town efforts on maintenance and beautification projects.

Arlington is also more actively committed to providing additional affordable housing, elderly housing, and assisted living facilities for low-income and elderly residents, and their needs for open space and recreational facilities must be addressed. In addition, new condominium and rental apartments near Arlington Center and the Arlington 360 apartments at the former Symmes Hospital site are attracting younger working people who appreciate the convenience of Arlington, as well as its suburban character, restaurants, and recreational opportunities, especially the Minuteman Bikeway. The resulting increased use of these resources means that even more attention to maintenance will be needed in the future.

D. Growth and Development Patterns

Land Use Patterns and Trends

Arlington has evolved from a farming community during colonial times to a Town where roughly 88 percent of the land available for development is currently developed for a combination of residential and commercial uses. Because Arlington is almost completely developed, it is unlikely that significant change in the land use patterns will occur.

The majority of Arlington's land use today is residential (72 percent). Arlington has a base of single-family homes, but sizable portions of Arlington's population live in two-and-three family homes, condominiums, and apartment buildings. House lots in Arlington are generally quite small (3,500 to 9,000 square feet – an average of 6,800 square feet) and do not usually provide sufficient recreational space. Residents, therefore, rely on the Town's open space, which is also quite limited because of Arlington's population density.

Arlington's Land Use

Arlington contains 3,509.9 acres within its borders. Arlington's land use, divided by 19 zoning designations and acreage, is shown in Table 3-3.

Arlington Zoning and Open Space

Arlington Town Meeting in 2001 voted to approve the creation of an open space district, increasing the number of zoning districts to 19. Nearly 50 Town-owned parcels, including parks, playgrounds and playing fields throughout the Town, were transferred into this new district, adding an extra level of protection from development to those designated sites. Eight of Arlington's other zones are residential, six are business, and the others are zones for special uses, such as industry and transportation.

³ Special permits are regulated under Massachusetts General Law Chapter 40A, "The Zoning Act." The other special permit granting authority in Arlington is the Zoning Board of Appeals.

Table 3-3. Arlington's Zoning Districts by Land Area

Zoning District (Abbr.)	District Name	Acres	Zoning District (Abbr.)	District Name	Acres
R0	Large Lot Single Family	238.2	B1	Neighborhood Office	25.9
R1	Single Family	1,771.5	B2	Neighborhood Business	16.9
R2	Two Family	619.7	B2A	Major Business	22.2
R3	Three Family	8.3	B3	Village Business	30.2
R4	Town House	19.4	B4	Vehicular Oriented Business	30.0
R5	Apartments Low Density	63.7	B5	Central Business	10.3
R6	Apartments Medium Density	49.0	I	Industrial	48.7
R7	Apartments High Density	18.7	MU	Multi-Use	18.0
OS	Open Space	275.9	T	Transportation	0.8
PUD	Planned Unit Development	16.2			
Total acres without water – 3,283.6					

Source: Arlington GIS, "zoning.shp". Table omits water area. With water, the total area in the GIS zoning map is 3,509.89 acres (5.6 sq. mi.) as found in the 2015 Arlington Master Plan.

Arlington also has a land use regulation known as Environmental Design Review (EDR), which helps to improve the visual quality of the environment and is required for certain classes of special permits.³ Most major development projects have to undergo EDR by Arlington's Redevelopment Board. EDRs have strict review standards. As part of the EDR, the board reviews the development plan for such elements as landscaping and relation of the site plan to the surrounding neighborhood.

Arlington grants special permits for uses that are desirable but that need special consideration and attention to limit any possible adverse impact.

While these visual elements *do not add* open space to Arlington, they do affect the visual quality of the Town (including its green character); they also provide buffer zones between adjacent land uses.

Projects that undergo EDR are typically located along major thoroughfares. These projects have an important effect on Arlington's open space system. For example, when conducting an EDR on a proposed development, the Arlington Redevelopment Board considers the site's proximity to major or significant open space. If the proposed site abutted the Minuteman Bikeway, for instance, the proposed project would be reviewed in terms of its relationship to the Bikeway. The Board might then recommend that the proposed project offer access to and from the bikeway. Projects near major water bodies or special features, such as entryways into the Town, would also undergo careful EDR. An EDR enhances Arlington's character and assures that major development parcels will maximize visual potential and consider their relation to the surrounding environment.

Infrastructure

Because Arlington is highly developed, its existing infrastructure is not expected to change drastically or to significantly determine the development of open space, although pressure for residential development has increased in recent years.

Transportation Systems

Arlington has a variety of systems suitable for various methods of transport:

- The Town's well-developed road system consists of 102 miles of public streets, 23 miles of private streets, and 6 miles of state highways and parkways.
- The Minuteman Bikeway carries bicycle and pedestrian commuter and recreation traffic. This rail/trail conversion project runs through Arlington's central valley (Mill Brook Valley), which also provides the most level and direct route through Town. The Bikeway links directly to the Alewife T Station in Cambridge and extends 11 miles through

Lexington and into Bedford. In recent years, bike lanes and shared use designations have been marked on many sections of Massachusetts Avenue and on a few other Town roads.

- The Massachusetts Bay Transit Authority (MBTA) provides bus service that connects to the Alewife T Station, to parts of Cambridge (including Harvard Square), and to other communities, including Somerville, Lexington, Bedford, Medford, and Burlington. The MBTA also provides The Ride, a van for low-income handicapped residents.
- The Council on Aging provides a jitney (van) service called "Dial-A-Ride." This service provides individualized routes and time of service to suit peoples' transportation needs. This service is supported by a federal grant for people with disabilities, the elderly, and lower-income people. The Council also has a van to transport elders to the Senior Center for activities and to medical appointments on an as-needed basis for a small fee.

Water Supply Systems

Arlington receives its drinking water from the Massachusetts Water Resources Authority (MWRA). Very few wells remain in Arlington, so they do not play a significant role in long-term planning.

Sewer Service

The MWRA disposes of Arlington's sewage. Arlington's sewer system consists of approximately 117 miles of pipe. There are five combined sewer outfalls (CSOs) on Alewife Brook between Massachusetts Avenue and the Mystic River (from the Somerville and Cambridge sides). The MWRA has proposed significant improvements to these outfalls to reduce wet weather discharges to Alewife Brook, and some work has been done. While the MWRA Sewer System serves the entire Town, a small number of septic systems remain in Arlington.

Long-term Development Patterns

As mentioned, the long-term development patterns of Arlington are already in place since the Town is almost fully developed. Land use regulatory policy now centers more around the redevelopment of existing sites and regulation by special permit for new uses rather than new subdivision control. The town is preparing a master plan (to be completed in 2015) to look at all aspects of physical development (transportation, housing, commercial centers, public facilities, etc.) as well as possible zoning changes, impacts on natural resources and open space, and effects on historical and cultural resources.

Control of land subdivision rests with the Arlington Redevelopment Board, acting in its capacity as the Town's Board of Survey pursuant to the 2009 law establishing that role. The Rules and Regulations Governing the Design and Installation of Ways were adopted by the Board of Survey in June 2010. This arrangement is unusual in Massachusetts (usually the Town planning board is in control of subdivision) and is due to historical factors in the Town's early-twentieth-century development. Arlington's Department of Planning and Community Development provides planning research and advice to Town officials and boards.

Arlington's Zoning Map 3-6 shows the Town's 19 zoning districts, including single- and multi-family residential, open space, business, transportation, industrial, multi-use (MU), and planned unit development (PUD).

Long-term Changes to Land Use Patterns

The existing pattern of Arlington's land use may evolve naturally over time with changes in local or regional circumstances, but major changes are not anticipated.

A significant circumstance that could change Arlington's land use patterns would be economic pressure for even more intense development that would cause the rezoning of land. Arlington has only a few vacant properties with development potential. Usually, though, these properties also have development constraints. For instance, the undeveloped land that comprises the Mugar site, located in East Arlington, is largely wetlands

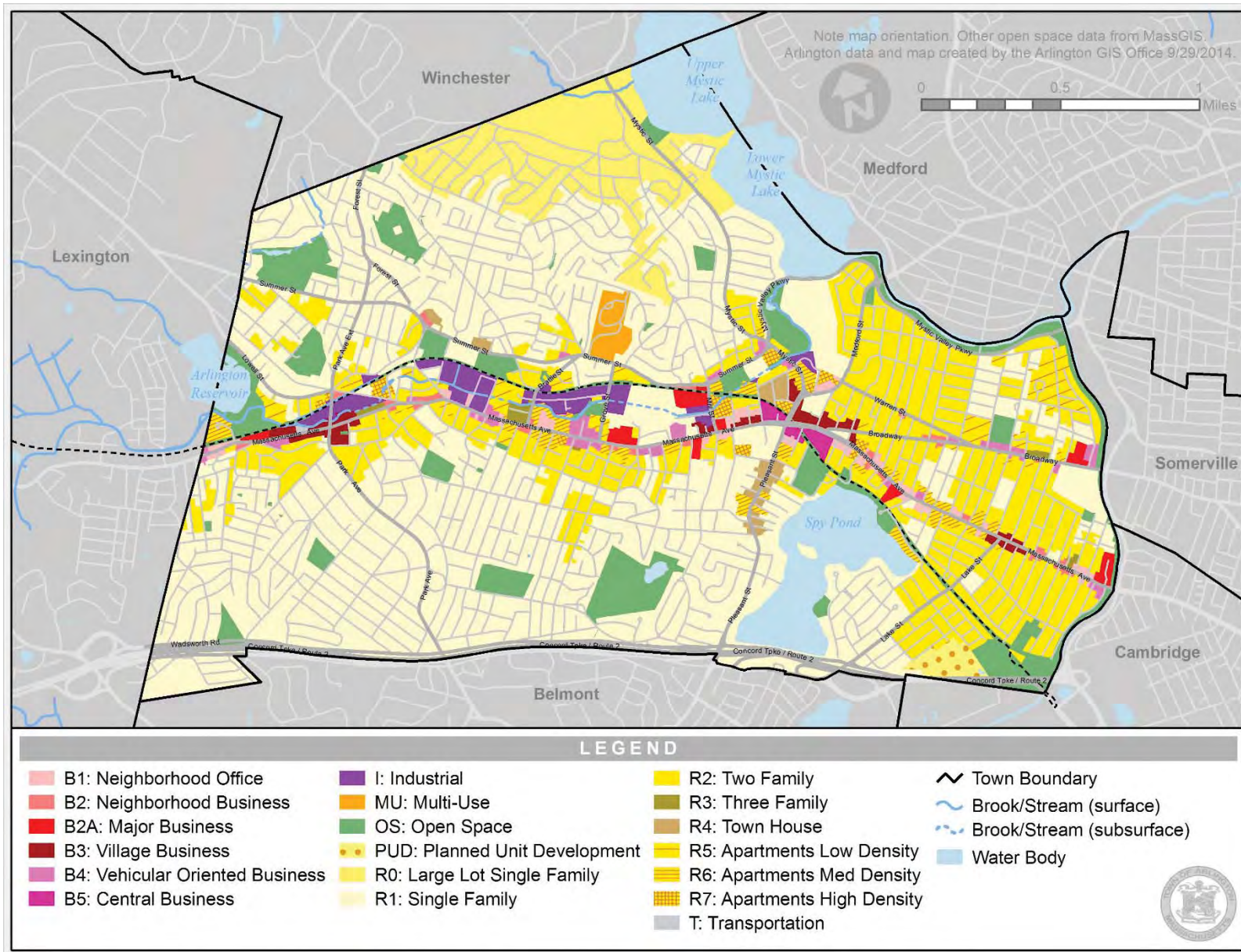
and floodplains, although it has been the subject of numerous development proposals. Town Meeting has voted several times to protect the property as open space.

Arlington is now focused more on preservation of existing protected lands and on acquisition of small parcels of open space where possible. Open space acquisition will likely occur on a piecemeal basis when properties in which the Town has interest come up for sale on the open market.

Build-out Analysis

Because Arlington is almost fully developed, this Plan does not contain a build-out analysis, which would show what could happen if the Town developed all its land to maximum potential under zoning. This type of analysis is more revealing for rural or more suburban communities than for an older developed suburb like Arlington.

Map 3-6. Arlington's Zoning Map



4

Environmental Inventory and Analysis

A. and B. Topography, Geology, Soils, and Landscape Character

Arlington is situated in the Coastal Plain of Eastern Massachusetts. Approximately 8 percent (286 acres) of Arlington's area is the surface water of bodies of water, including Spy Pond, Hill's Pond, Arlington Reservoir, Mill Brook, Alewife Brook, and the Mystic Lakes. The town lies on the western, or outer, geological edge of a broad, flat, floodplain known geologically as the Boston Basin (see Map 4-1).

Topography and Geology

Approximately one-third of the town (east of Arlington Center) is part of the Boston Basin, a fairly low and level land mass. The range of elevation in this section is from 10 to 40 feet above mean sea level; it is located along the Alewife Brook floodplain and extends to Spy Pond and the Lower Mystic Lake. Spy Pond is part of the headwaters of Alewife Brook. It feeds the brook through the Little River in Belmont, although the construction of Route 2 altered Spy Pond's historic relationship to the Little River.

Just beyond the western shores of the Lower Mystic Lake and Spy Pond is an unbroken ridge (elevation 49.2'), which is part of a terminal moraine. This ridge marks the beginning of Arlington's characteristic rocky knobs

and unsorted glacial rock masses. The western portion of Arlington is hilly and rocky, with elevations ranging from 100 to nearly 400 feet above sea level. This part of town marks the beginning of the Boston escarpment. Arlington's hills, which are remnants of ancient mountains, are divided by a valley carved by the action of the now-extinct Arlington River. Outcrops of igneous rock are evidence of an earlier mountain-building volcanic period. Mill Brook now flows in a west-to-east direction through this valley.

Arlington's topography bears distinct marks of the glacial period. As the glacier moved down from the north, rocks of various shapes and sizes were scoured from the mountains, pulled up and carried forward by the flow of ice. As the glacial period ended, masses of rocks were dropped in unsorted layers as the forward edge of ice melted. These formations are called terminal moraines, and an example may be seen on the southern slopes of Arlington Heights.

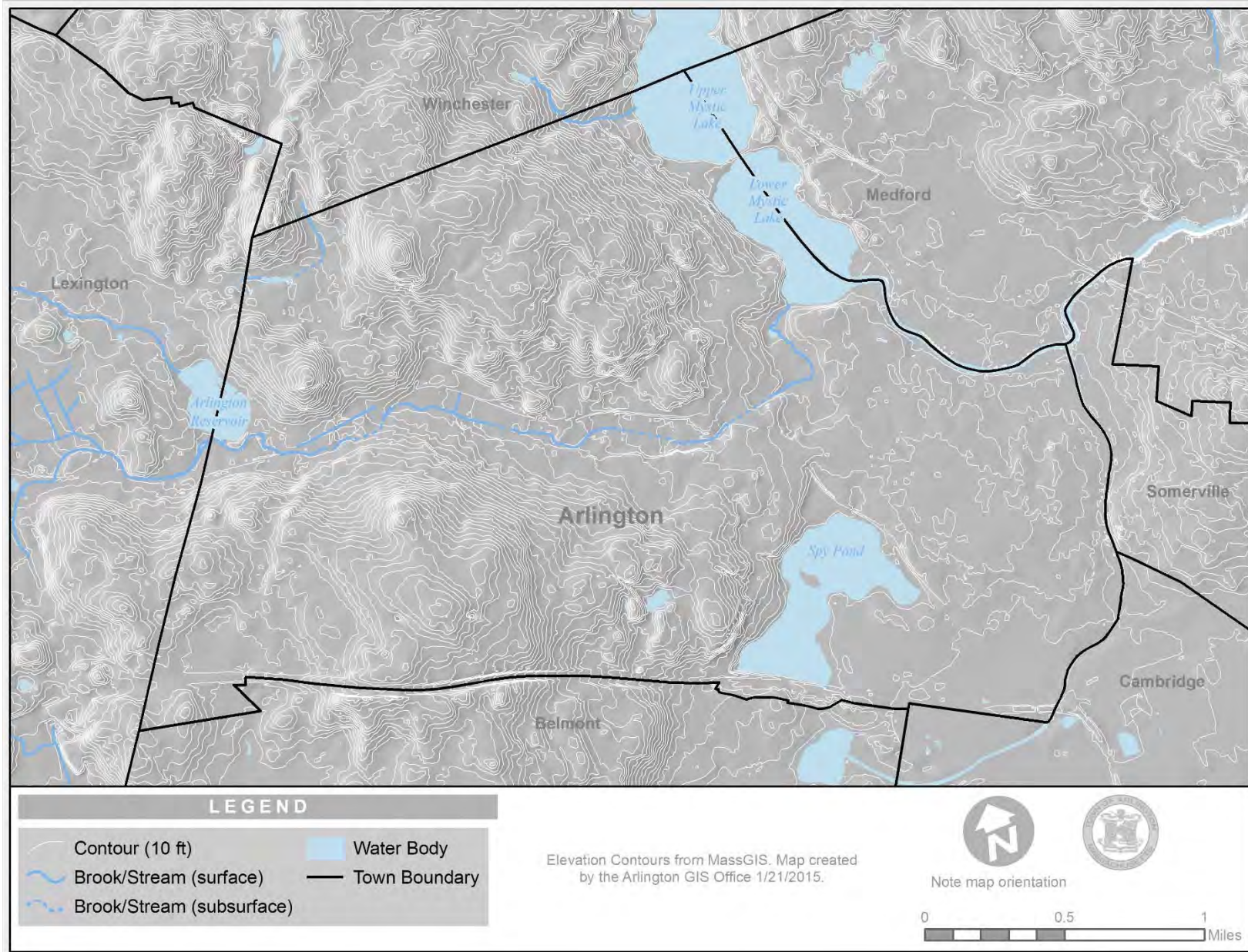
Soils

Most of the soils in Arlington are designated urban land complexes because they have been modified so they no longer retain their original properties. Arlington's most common soil, a Charlton-Hollis-Urban Land Complex, is located in western areas and is found on slopes of 3 to 5 percent. Charlton soils are well-drained, upland soils where the relief is affected by the bedrock. They are stony, with 60 inches or more of friable fine sandy loam (a silt-sand-clay mixture). Hollis soils are shallow (<20 in.), excessively drained soils on bedrock uplands. They are also friable fine sandy loam (adapted from McLaughlin 1994, 13).

The Newport-Urban Land Complex soil is also located in western areas of town, particularly the land west and northwest of Park Circle, lands east of Turkey Hill, and lands west of the Winchester Country Club. These soils have 3-15 percent slopes and tend to be silty loam.

East Arlington contains primarily a Merrimac-Urban Land Complex soil found on 0-8 percent slopes. Merrimac soils are excessively drained soils on glacial outwash plains and are sandy loams over a loose sand and gravel

Map 4-1. Topography at Ten-foot Intervals in and around Arlington



layer at 18-30 inches (adapted from McLaughlin 1994, 13). These soils contain approximately 75 percent urban land/disturbed soils. There are also some pockets of Sandy Unorthents and Unorthents wet substratum soils by the lakes, streams, and wet areas. Unorthents soils have "been excavated and/or deposited due to construction operations" (USDA Soil Conservation 1991, 27). Map 4-2 shows the location of Arlington's most prominent soils and special landscape features.

Effects of Soils, Topography, and Geology on Open Space

Arlington has been more affected by its location in the greater metropolitan Boston area than by its soil types or topographical and geological limitations. Even though much of Arlington is quite hilly, especially in the western area known as the Heights, these hills have not significantly affected development. Further, Arlington's most common soils and topographical and geological characteristics pose little hindrance to potential development or redevelopment. The majority of buildable land has already been used for housing development, and very little land is available for other purposes, including open space and recreational use.

C. Water Resources

Arlington's water resources have great scenic, recreational, and ecological value; they are not used for drinking water, because Arlington receives its drinking water from Massachusetts Water Resources Authority (MWRA). Arlington's water bodies are part of the Mystic River Watershed, which is part of the Boston Harbor River Basin. Map 4-3 shows Arlington's water resources, wetlands, and floodplains based on recent FEMA analysis.

Surface Water

Surface water makes up roughly 8 percent (286 acres) of Arlington's area (3,517.5 acres). The numerous water bodies make water resources a unique attribute of the town and its open space assets, compared to other metro-Boston communities (see Table 4-1). However, as in many

Massachusetts communities, access to water bodies is limited, since shoreline in Arlington is predominantly in private ownership. Charles Eliot (1926) and others recognized the recreational, ecological, and visual importance of the town's larger water bodies—Spy Pond, the Mystic Lakes, and the Arlington Reservoir. Even though much of the land bordering these water bodies has been lost to development, there are still significant opportunities for improving access to them.

According to the Department of Environmental Protection's (DEP) 314 CMR 4.00 (as most recently amended in December 2013), all Arlington water resources have a classification of B or better, indicating either the water body's current class or its goal classification. The DEP defines waters classified as B or better as water bodies that "are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation."¹

Table 4-1. Water Resources in Arlington

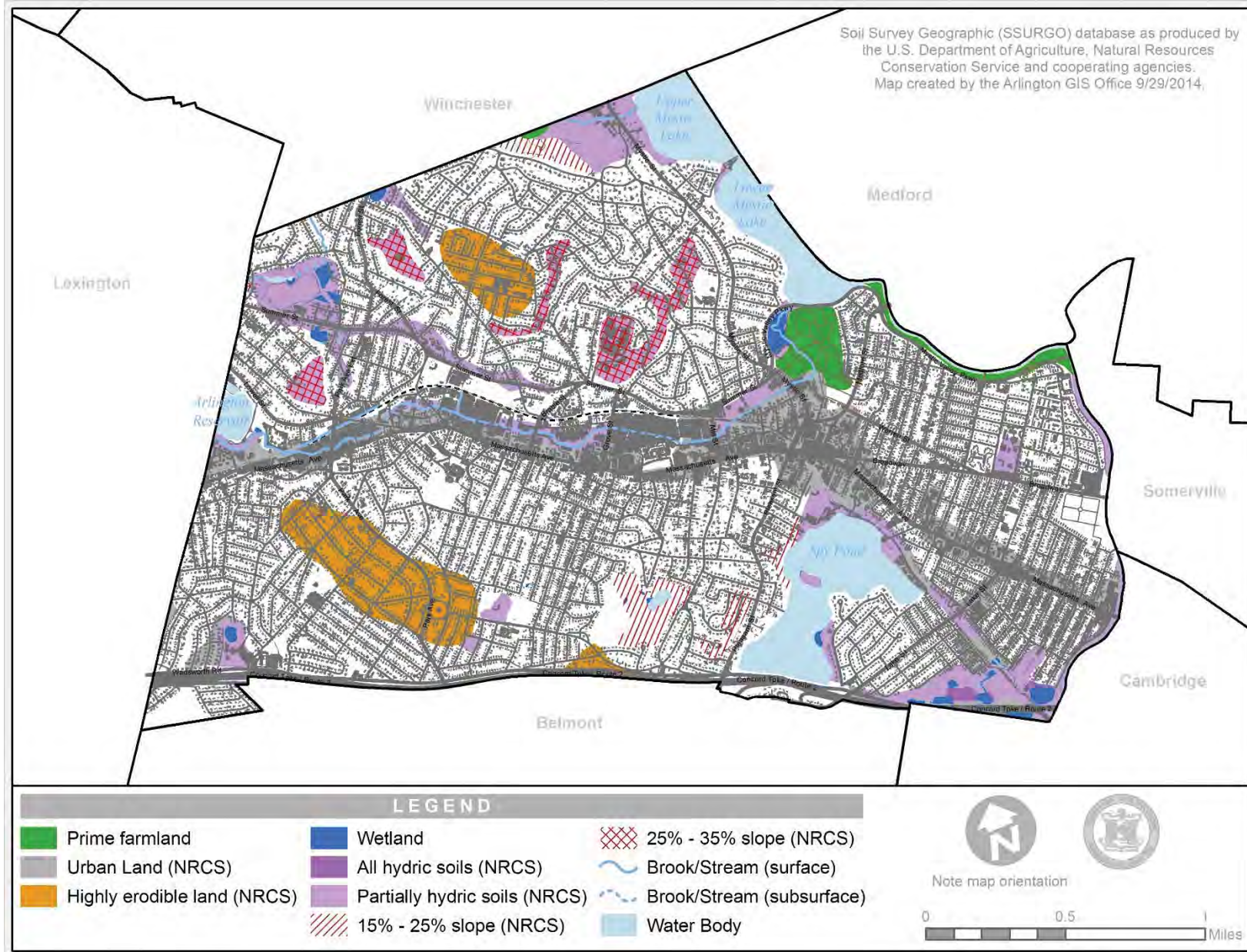
Lakes and Ponds	Rivers and Streams
Arlington Reservoir	Alewife Brook
Hill's Pond	Mill Brook
Lower Mystic Lake	Mystic River
Upper Mystic Lake	Reed's Brook
Spy Pond	

Profiles of Key Water Resources

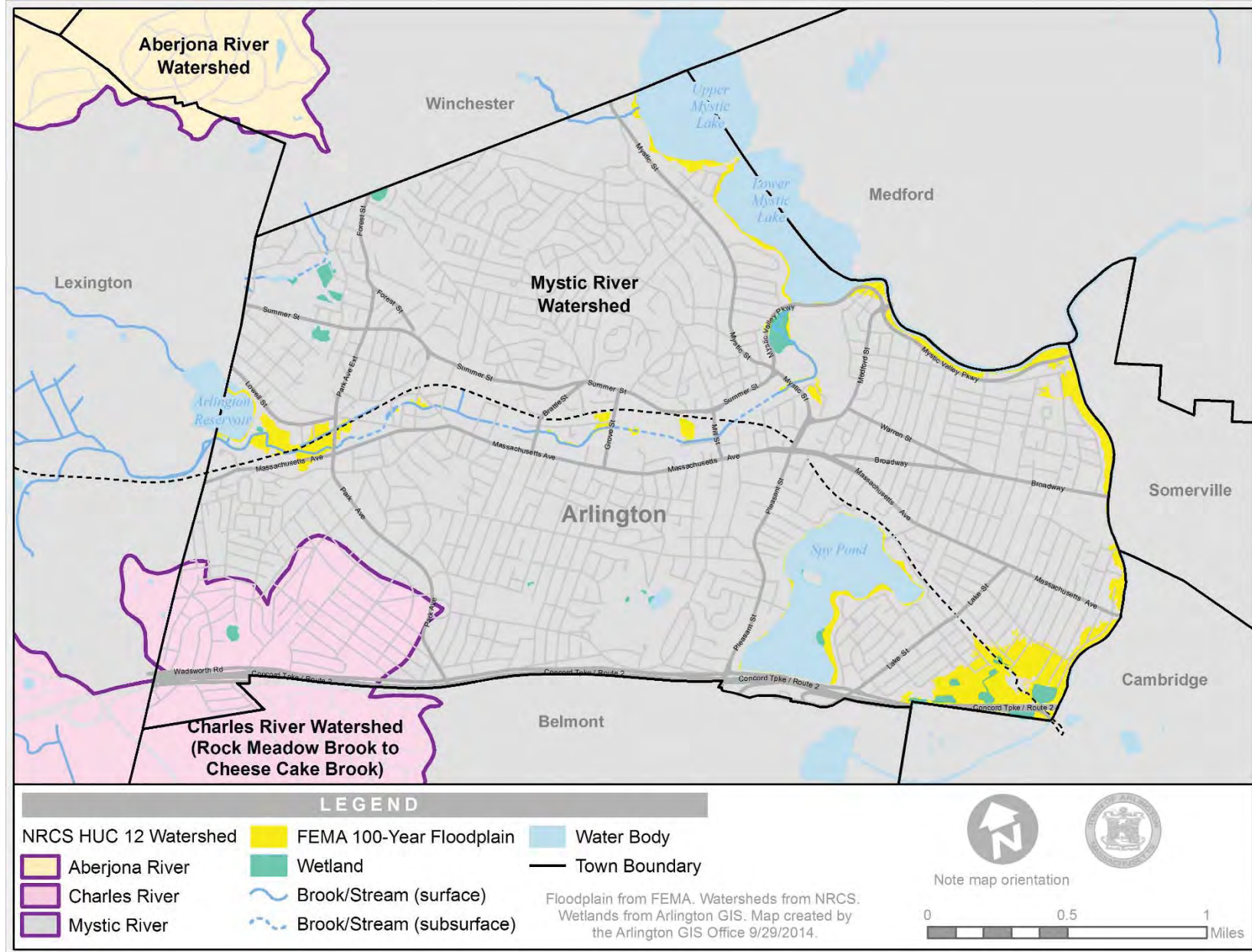
A brief profile of each water resource follows, including public access, recreational uses and, for some water bodies, wildlife uses. The Inventory of Lands of Conservation and Recreation Interest (Chapter 5) has further details on these resources.

¹ See DEP Massachusetts Surface Water Quality Standards - 314 CMR 4.05(3)b).

Map 4-2. Soils and Special Landscape Features



Map 4-3. Water Resources, Wetlands, and Floodplains



Alewife Brook

Access: Much of the state-owned Department of Conservation and Recreation (DCR) Alewife Brook Reservation in East Arlington is accessible by foot; the reservation also encompasses areas in Cambridge and Belmont. Access points to walking paths along the brook can be found at the intersections of the brook and the following major roads: Massachusetts Avenue, Broadway, and Mystic Valley Parkway; access is also available at the end of Thorndike Street, where there is a large phragmites marsh adjacent to the brook. DCR's construction of the Alewife Brook Greenway linking the Minuteman Bikeway and Mystic Valley Parkway with a walking and bicycling path along the brook has increased access and enhanced landscaping in the area since its completion in 2013.

However, recently constructed and proposed residential and commercial developments in Arlington, Belmont, and Cambridge continue to threaten the hydrology and nature of the upper Alewife Brook drainage area. The threat of flooding conditions to wildlife habitat, native vegetation, and public access for passive recreation is very serious and has prompted much public comment and advocacy.

Recreational Use: Passive recreation is the primary use of Alewife Brook, notably walking and bird watching. The brook itself is not typically used for active recreation, although parts of the brook are navigable by canoe or kayak, when the water level is high enough.

Wildlife Use: Alewife Brook supports a small herring run, one of the few left in the Boston area. The brook and its banks attract many varieties of birds, small mammals, reptiles, and amphibians.

Arlington Reservoir

Access: The Arlington Reservoir, which is located in both Arlington and Lexington, is accessible from several streets and neighborhoods via paths to the walking trail around the water body. A parking lot on Lowell Street is accessible throughout the year. Another year-round parking lot abuts Hurd Field and Drake Village, a short walk from the Reservoir trail, the

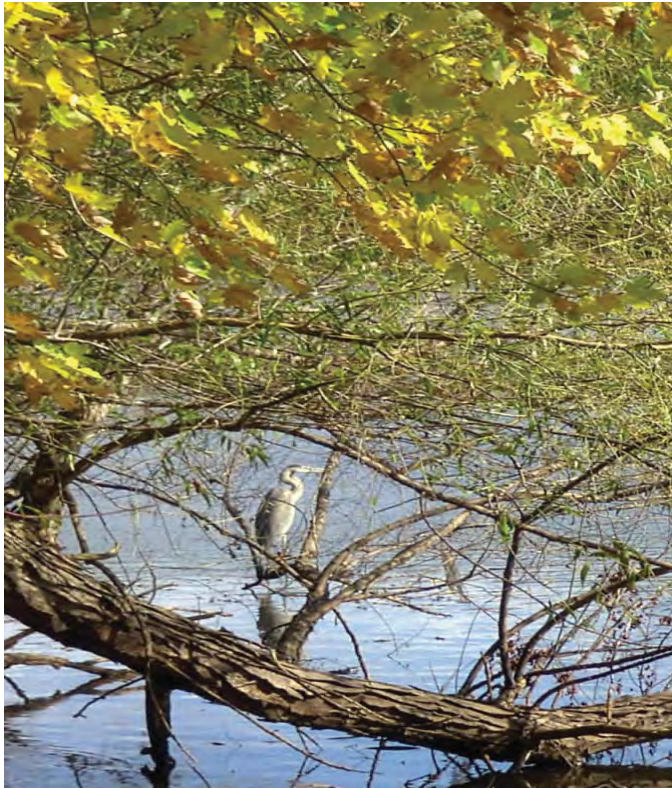
Minuteman Bikeway and Massachusetts Avenue. There is also the potential to connect the Reservoir to Arlington's Great Meadows in Lexington via walking trails along Munroe Brook and existing roadways. Another trail along Sickle Brook links the Reservoir to the Minuteman Bikeway in East Lexington.

The Massachusetts Department of Environmental Management (DEM) notified the town in 1998 that the earthen dam around the southern (Arlington) end of the Reservoir posed a high hazard to downstream residents and property. The initial remediation proposal called for the removal of trees and other vegetation and the rehabilitation of the dam. In response to active community involvement, a mitigation plan was developed over the next several years that met safety concerns yet also preserved the natural habitats. The dam was reinforced with an I-Wall barrier that protects against seepage and breaching while also preserving most of the trees.

The work, which also added a new spillway and bridge, was completed in 2006. The project won the Public Works Project of the Year for 2006 from the American Public Works Association and a state award. Beyond habitat concerns and scenic/passive recreational benefits from the walking path around the Reservoir, the initial, more drastic changes to the dam and the water level would have had important consequences for public access to the swimming area and beach.

Recreational Use: Arlington Reservoir is a manmade recreational and flood control reservoir. In the late 1970s the town reconstructed a sandy beach and swimming area within the Reservoir by building an earthen impoundment to separate the swimming area from the rest of the Reservoir. A water filtration system keeps the swimming water clean. Residents from Arlington and surrounding communities use this area (called Reservoir Beach) in the summertime for swimming and other recreation. The Reservoir and its one-mile walking trail is used throughout the year for birding, cross-country running, fishing, jogging, and skating.

Wildlife Use: Arlington Reservoir supports the most diverse aquatic wildlife in town. Over 60 species of water birds and shorebirds have been found there among the more than 200 bird species recorded to date. The annual cycle of raising and lowering the water level enhances the variation of habitats that attract different species at different times of year.



Great Blue Heron at Arlington Reservoir. Courtesy of Open Space Committee.

Hill's Pond

Access: Hill's Pond in Menotomy Rocks Park is accessible by a path that begins at the Jason Street entrance and from other entry points on several streets around the park.

Recreational Use: Hill's Pond is a manmade pond that offers scenic recreational value. People use the pond for passive recreation, including fishing, ice skating, and bird watching.

Wildlife Use: This small pond is home to common inhabitants such as birds, sunfish, frogs, and insects.

Mill Brook

Access: Most of the area abutting Mill Brook is developed, and some of it is industrial, so access is limited. Several sections of the brook run through underground culverts. The public can access the brook at Meadowbrook Park, Mt. Pleasant Cemetery, Cooke's Hollow conservation area (all off Mystic Street near the brook's eastern end), Mill Street, Mill Brook Drive, Wellington Park (on Grove St.), Watermill Place and Old Schwamb Mill (on Mill Lane), Park Avenue, Hurd Field, and the Arlington Reservoir, where the brook begins. Town policy requires that all new developments or redevelopment abutting Mill Brook provide public access.

Recreational Use: Mill Brook has scenic and historic value in certain areas, but is not used for active recreation. Accessible areas are limited, but are used for walking and bird watching.

Mystic Lakes

Access: Access to the Mystic Lakes in Arlington is limited because most of the shore land is privately owned. Public access is available along Mystic Valley Parkway in Medford and Winchester, but parking on the Arlington side is available only by parking on side streets nearby.

Recreational Use: The Upper and Lower Mystic Lakes straddle the boundaries of Arlington, Winchester, and Medford. People use the lakes for swimming, boating, and fishing. A three-acre wooded waterfront conservation area in Arlington next to Upper Mystic Lake off Mystic Street (Route 3) near the Winchester town line, known as "Window-On-The-Mystic," is used for passive recreation. The Arlington Conservation Commission installed a bench on this shoreline so visitors may rest and

enjoy the view of the lake and the preserved open space. Two private boat clubs are located on the Mystic Lakes. The Medford Boat Club is on DCR land and is accessible from both Arlington and Medford. It straddles land next to the dam that separates the upper and lower lakes. The Winchester Boat Club on Upper Mystic Lake is not accessible from Arlington.

Wildlife Use: The Mystic Lakes support a varied fish population, notably Alewife and Blueback Herring that migrate and spawn each spring. When DCR rebuilt the dam between the two lakes in 2013, it included a fish ladder that has increased the herring activity significantly. The lakes also support numbers of seasonal and migrating water birds. Bald Eagles have been seen regularly over the past several winters.

Mystic River

Access: Access to the Mystic River is available along the Arlington portion of the Department of Conservation and Recreation (DCR) parkways. The only parking area along the Arlington side of the river is near the intersection of Alewife Brook and Mystic Valley Parkway at the northern end of the new Alewife Brook Greenway.

Recreational Use: The Mystic River is used for boating, fishing, bird watching, and appreciation of nature in an urban area. Along its banks, many people enjoy picnicking, walking, and dog walking.

Wildlife Use: The Mystic River supports a small herring run of both Alewife and Blueback Herring. The river is an important habitat for many species of birds, and an over-wintering area for waterfowl, because its water current usually prevents it from freezing completely.

Spy Pond

Access: Spy Pond is accessible to the public at several points, via streets that lead to the pond and at Spy Pond Park on the northeastern shore. Access to the pond also exists along a paved path on its southern shore, adjacent to Route 2. The Spy Pond Committee of Vision 2020, with assistance from the Appalachian Mountain Club Trail Team, has carried out

major rehabilitation work on that path, including building steps at access points, removing invasive plants, and planting native vegetation.

Recreational Use: Fishing, boating, bird watching, and skating are popular on and around Spy Pond. The Arlington Boys and Girls Club, located on the northeastern shore, uses Spy Pond for boating in the summer months. A major landscape renovation of the park land was implemented in 2005 through the Park and Recreation Commission. In addition, the Town received a grant from the Massachusetts Department of Environmental Management (DEM) for a Lake and Pond Watershed Restoration Project, which incorporated innovative and comprehensive storm water management measures in an effort to restore this urban pond to recreational usability.

Wildlife Use: Spy Pond supports a limited fish population, and in the fall and spring the pond is an important resting and feeding area for migrating birds. Throughout the year Canada geese, mallard ducks, and mute swans are found along the shores, and more than 120 permanent and migrating species have been documented.

Wetlands, Flood Hazard Areas, and Aquifer Recharge Areas

Arlington's wetlands provide opportunities for nature observation, skating and fishing as well as walking and bird watching in adjacent uplands. Major flooding problems caused by severe storms have been experienced every few years. The areas around Reed's Brook, Mill Brook, Alewife Brook, and the Mugar property were particularly affected. As mentioned earlier, Arlington imports water from the MWRA for its domestic and commercial consumption; therefore, the issue of aquifer recharge is not relevant to Arlington.

D. Vegetation

Arlington's vegetation consists of a mixture of native and introduced species. Little is known about the town's pre-Colonial era vegetation, since Arlington was clear-cut in the 1600s (McLaughlin 1994) when much of the

area was farmed, so most of the existing vegetation is second or third growth. An in-depth, townwide survey of flora found in Arlington has not been undertaken, but a major study of vegetative communities in Arlington's Great Meadows was commissioned by the Arlington Conservation Commission and completed in the spring of 2001 (see Clark 2001). The Friends of Menotomy Rocks Park has surveyed the vegetation in that park, and the Town now has a Tree Committee that is primarily concerned with protection and replacement of street trees.

Woodland Areas

A few small woodlands in Arlington provide peaceful areas for passive recreational activities, walking and nature observation, and are second-growth reminders of more heavily wooded areas or forests of the past. Arlington's wooded areas include Menotomy Rocks Park, Turkey Hill, Mount Gilboa, Arlington Reservoir, a portion of the Symmes property, and the Crusher Lot at the Ottoson Middle School. All of Arlington's woodlands have significant overstories, which do not allow extensive shrub growth. Species typical of an Oak-Hickory forest dominate the woodland areas, including White Ash, Black Oak, Red Oak, White Oak, Scarlet Oak, Hophornbeam, Bitternut Hickory, Shagbark Hickory, White Pine, and Sassafras. These areas also contain species common to disturbed soils, including Staghorn Sumac, Grey Birch, and Paper Birch. Some woodland communities also include Sugar Maple, Black Cherry, and Basswood (Linden).

The native shrubs and plants found in Arlington woodlands are typical of those found in other Boston Basin areas: Blueberry, Currant, Dangleberry, Deerberry, Maple Leaf Viburnum, Pipsissewa, Whorled Loosestrife, Sarsaparilla, and False Solomon's Seal.

Nonnative species that have infiltrated Arlington woodland areas include Norway Maple, Tree-of-Heaven (*Ailanthus*), Sycamore Maple, European Mountain Ash, and Cherry Cultivars. Nonnative shrubs include Common Buckthorn, European Buckthorn, Forsythia, Winged Euonymus, some Honeysuckles, Multiflora Rose, Oriental Bittersweet, Barberry, and Japanese Knotweed.

Wetland Areas

Arlington has a number of marshes, ponds, streams, rivers, and lakes containing trees such as Green Ash, Silver Maple, Red Maple, Ashleaf Maple, Cottonwood and Willow. Cattail, Silky Dogwood, Red Osier Dogwood, Buttonbush, and the pervasive Purple Loosestrife and Phragmites are also key constituents in these areas. Willow trees, which grow in wet soils, line the edge of Spy Pond, Thorndike Field, and Arlington Reservoir. Reed pads and aquatic weeds are found in and along the edges of the watercourses, inland marshes, Mystic Lakes, and Spy Pond.



Wetlands in Menotomy Rocks Park. Courtesy of Open Space Committee.

Landscaped and Mowed Areas

Arlington contains many landscaped and mowed parks and reservations that are accessible for sporting activities, sledding, picnicking, strolling, relaxation, and scenic viewing. Robbins Farm, Town Hall Garden, Poets Corner, Hibbert Street Playground, Thorndike Field, Magnolia Field, and McClennen Park are some of these areas. Given the suburban character of the town, the primary vegetation found in its parks and reservations is a variety of deciduous and coniferous trees and cultivated shrubs and grasses.

In mowed areas, a variety of herbs and wildflowers grow naturally. Chicory, Yarrow, Burdock, Clover, All-heal, Plantain, and Tansy are among the plants that have managed to take root amidst the grasses. Nonnative Japanese Knotweed often invades paved or mowed areas, and is especially prevalent along the Minuteman Bikeway.

Tree plantings in parks and reservations include Alder, Cedar, Hawthorn, Metasequoia, Lombardy Poplar, Sycamore, Dogwood, and flowering ornamentals. Arlington's streets are lined with several species of maples and oaks, Sycamore, Basswood (Linden), and Ash, among other trees.

The use of native plantings in Arlington has gained ground through the efforts of the Arlington Conservation Commission and its native plant list, and through the policies of the Town Department of Public Works to use native trees and plants in its own work.

Rare, Threatened, or Endangered Species

Currently six species of vascular plants are listed as threatened (T) or endangered (E) on the Massachusetts Endangered Species List (see Table 4-2). Threatened species, as defined by the Massachusetts Division of Fisheries and Wildlife, "are native species which are likely to become endangered in the foreseeable future, or which are declining or rare as determined by biological research and inventory" (321 CMR 10.03(6)(b)).

Table 4-2. Rare, Threatened, or Endangered Plant Species

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Vascular Plant	<i>Aristida purpurascens</i>	Purple Needlegrass	T	1913
Vascular Plant	<i>Cyperus engelmannii</i>	Engelmann's Umbrella-sedge	T	2010
Vascular Plant	<i>Sagittaria montevidensis</i> ssp. <i>spongiosa</i>	Estuary Arrowhead	E	1870
Vascular Plant	<i>Houstonia longifolia</i> var. <i>longifolia</i>	Long-leaved Bluet	E	1898
Vascular Plant	<i>Galium boreale</i>	Northern Bedstraw	E	1890
Vascular Plant	<i>Asclepias verticillata</i>	Linear-leaved Milkweed	T	1854

Source: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>

E. Fisheries and Wildlife

Although there are few areas for wildlife to thrive in Arlington's urban setting, the town still has a good mixture of fish and other wildlife species. Arlingtonians value the town's natural areas, and protection of wildlife is an important aspect of preserving those open spaces and natural corridors.

Fauna, in General

The variety of fauna in Arlington is linked directly to the quantity, quality, and diversity of soils, water, and vegetation, but their relative abundance is also constrained by human activity. Thus, maintenance and regulation of the use of certain areas within open spaces is crucial to Arlington's ability to enhance, preserve, and enjoy its living resources.

Currently, there are few up-to-date inventories of Arlington's fauna. Birds are the best documented species, due to the expertise of local observers and the relative ease with which they can be documented. The Menotomy Bird Club maintains an informative website, and bird lists have been compiled by volunteers for the Arlington Reservoir, Menotomy Rocks Park, McClennen Park, and Spy Pond.

In general, what is known about birds probably represents most of the fauna in town; that is, where proper habitat exists, there are pockets of wildlife that have adapted to or tolerate the changes of the last three centuries. However, some areas that appear to be natural are not prime wildlife habitat and require active management. The majority of Arlington's wetlands are good examples of these poor habitat areas, because of the large stands of introduced Phragmites reed and Purple Loosestrife that have thrived, compared to native cattails, sedges, and grasses. In addition, most wildlife does not thrive in fragmented, small plots, and each wildlife species requires a certain minimal sized area. Even paths or roads through certain habitats can change the species' assemblage.

The presence and distribution of major fauna groups other than birds, such as invertebrates, reptiles, amphibians, and mammals, are less well known. Most local native fauna have declined over the past century, as has wildlife across all of urban North America. However, because of its well-planted residential areas, existing undeveloped open spaces, small wildlife corridors, and the close proximity of open space in neighboring towns, Arlington hosts a surprising array of wildlife for a town of its size and development.

Invertebrates

Thousands of species of invertebrates inhabit Arlington, but none have been well surveyed. Because these animals are the part of the fauna that binds ecosystems together, they are vital to a viable ecosystem. The most common invertebrates are insects. Arlington's fauna range from the obvious butterflies (e.g., Monarch, Viceroy, Cabbage Butterfly, and Black and Tiger Swallowtails), to the dragonflies, to the many other pest and

nonpest species. The abundance and distribution of common insects in Arlington is unknown. Numbers of species of spiders, crustacea, and mollusca are also unknown.

Fishes

The Mystic River watershed has very few species of fishes; biologists have documented only 29 species (23 native and 6 introduced or stocked; Hartel, Halliwell, and Launer 2002). Due to the geology, the relative small size of the Mystic drainage basin, and the changes in the quality of the town's streams, the Arlington area may now have fewer species. While not listed state-wide, two species of river herring have declined drastically in the Cambridge/Arlington area. They currently migrate in small numbers in Little River and the lower parts of Mill Brook from the Mystic River. The Mystic River Watershed Association (MyRWA) has been active in promoting enhancement of the passage of migrating native anadromous herrings wherever they have potential access in the watershed.

There is a limited amount of sport and ice fishing in Arlington's major water bodies. Large Carp, Bluegill, and Pumpkinseed Sunfish are common, and even 2-3 pound Largemouth Bass appear occasionally. Spy Pond was first stocked as early as 1918. The infertile hybrid tiger-musky was later introduced into Spy Pond as a trophy fish and as biological control for overpopulated sunfishes.

Reptiles and Amphibians

Because of the secretive nature of reptiles and amphibians, little is known about their occurrence in Arlington. The common species that exist in populated areas can easily be found in Arlington: Eastern Red-backed Salamander, Bullfrog, Green Frog, Garter Snake, Snapping Turtle, and Painted Turtle.

Birds

Over the past 25 years, careful observers have recorded nearly 240 species of birds in and around Arlington, including more than 60 breeding species. The most abundant are those that have adapted to urban habitats. The

European Starling, Rock Dove (Pigeon), and House Sparrow, which were introduced in the 1800s, are very numerous. Common breeding birds found year round in backyards, small wooded areas, and vegetated parks in Arlington are Northern Cardinal, Blue Jay, Tufted Titmouse, Black-capped Chickadee, Goldfinch, White-breasted Nuthatch, Northern Mockingbird, Downy Woodpecker, House Finch, American Robin, and Mourning Dove.



Menotomy Bird Club on an outing. Credit: Menotomy Bird Club

Species such as Northern Flicker, Chimney Swift, Eastern Kingbird, Great Crested Flycatcher, House Wren, Gray Catbird, Northern Oriole, and Red-tailed Hawk breed in Arlington, but generally migrate south for the winter. Most of these species are insect eaters, consuming thousands of insects and worms over the summer season.

Arlington's wet open spaces and ponds attract large numbers of birds, especially during migration. More than 25 species of ducks visit Spy Pond, the Mystic Lakes, and Arlington Reservoir; the most spectacular and common are American Wigeon, Hooded, Common, and Red-breasted Merganser, Ring-necked Duck, Wood Duck, Northern Shoveler, and Ruddy Duck. Also common are Mallard Duck, Black Duck, Canada Geese, and Mute Swans.

A dozen species of sandpipers and plovers can be found at the water's edge, especially around the flats at Arlington Reservoir and Hill's Pond. All of these species require relatively clean aquatic habitat with abundant prey items. Spotted, Least, Pectoral, Semi-palmated and Solitary Sandpipers, along with Greater and Lesser Yellowlegs, are found regularly. Great Blue and Black-crowned Night Herons are quite common.

More than 50 species, many of which require open meadow or edge, nest at Arlington's Great Meadows. American Woodcock, Common Snipe, Northern Harrier, Ring-necked Pheasant, Marsh Wren, and other meadow birds are some of the less common birds that can be found there (Andrews et al. 1993; Clark 2001).

Of the 237 species of birds reported in Arlington, more than 40 species are new to the area since the 193 species reported in the 1996 Arlington Open Space Plan, which was based on the bird list of Andrews et al. (1993). Recent additions include: Snowy Egret, Glossy Ibis, Tricolored Heron, Baird's Sandpiper, Short-billed Dowitcher, Northern Goshawk, Philadelphia Vireo, Horned Lark, Pileated Woodpecker, Grasshopper Sparrow, Monk Parakeet, White-fronted Goose, and Leach's Storm Petrel.

A number of locally uncommon or unusual birds are found in and around Arlington's open spaces and water bodies. These species may not be listed officially as rare, but they form a special part of the very urban nature of Arlington and Greater Boston. Such species include the Bald Eagle, Wild Turkey, Great Cormorant, Green Heron, European Wigeon, Canvasback, Woodcock, Golden Plover, Pectoral Sandpiper, two species of Cuckoos, Red-bellied and Pileated Woodpeckers, all six species of local swallows,

numerous warblers species, Bobolink, and Orchard Oriole. These species may be found in Arlington because of the availability of appropriate habitat, such as the large Mystic Lakes, the mudflats of the Reservoir, the wet meadows at Great Meadows, or the mature trees at Menotomy Rocks Park.

Mammals

Many of the typical mammals that survive and sometimes even thrive in urban settings appear in all areas of Arlington, including Virginia Opossum, Raccoon, Striped Skunk, Gray Squirrel, House Mouse, and Norway Rat. Other species are found less frequently, such as Northern Short-tailed Shrew, Little Brown Bat, Eastern Chipmunk, White-footed Mouse, and Eastern Cottontail. Certain species may be common but are found only in restricted habitats, such as Muskrat in aquatic areas, Meadow Vole in open meadows and Red-backed Vole in wooded areas. Larger mammals are generally absent from Arlington, although White-tailed Deer, Red Fox, Coyote, Fisher Cat, and Woodchuck are seen regularly. Several coyote dens have been reported in different parts of town (Clark 2001).

Rare, Threatened or Endangered Species

There are few federal- or state-listed threatened (T), endangered (E), or special concern (SC) species in Arlington (Table 4-3). One bird—the Golden-winged Warbler—is listed as endangered.² Massachusetts Natural Heritage & Endangered Species Program Town Species Viewer, 2014. The Mystic Valley Amphipod *Crangonyx aberans*, is known from Great Meadows and possibly other water bodies (Smith 1983; 1991). The Bridle Shiner *Notropis bifrenatus* is found, or was known from, the Mystic River just east of Arlington and might have occurred in Arlington in the past. Arlington also has breeding populations of the uncommon Black-billed Cuckoo and Orchard Oriole. Other state-listed species, such as Bald Eagle, Peregrine Falcon, Northern Harrier and American Bittern, are also recorded occasionally but are not known to breed in Arlington (Andrews

et al. 1993; Viet and Peterson 1993). No state or federally listed fishes or mammals have been found in Arlington.

Table 4-3. Rare, Threatened, or Endangered Fisheries and Wildlife Species

Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Observation
Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	1895
Amphibian	Ambystoma opacum	Marbled Salamander	T	Historic
Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC	1923
Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T	1930
Bird	Circus cyaneus	Northern Harrier	T	1879
Bird	Vermivora chrysoptera	Golden-winged Warbler	E	1874
Butterfly / Moth	Eacles imperialis	Imperial Moth	T	1903
Reptile	Glyptemys insculpta	Wood Turtle	SC	1898

Source: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html>

Wildlife Corridors

Natural corridors that connect two or more habitat areas allow the free movement of wildlife. In densely populated communities such as Arlington, wildlife may be forced to use train tracks, rail trails, bike paths or

² Massachusetts Natural Heritage & Endangered Species Program Town Species Viewer, 2014.

power lines as corridors, as well as streams, rivers, undeveloped wetlands and riparian buffers.

Due to its proximity to many open space parcels, Mill Brook, and other water bodies in Arlington, the Minuteman Bikeway forms an important spine of habitat movement. It runs roughly west to east from the northwest portion of Arlington near the Arlington Reservoir to the southeast corner and Spy Pond (the area of BioMap Core Habitat and Priority Habitat of Rare Species in Arlington). Open space access from the bikeway near Buzzell Field leads to Mt. Pleasant Cemetery, through Meadowbrook Park, and into the Lower Mystic Lake. An additional habitat corridor is formed to the north along the banks of the Lower Mystic Lake, which then leads to the Upper Mystic Lake and into Winchester. To the south the habitat corridor continues with the Minuteman Bikeway leading into Cambridge, with links to the Alewife Brook Reservation on both sides of the brook. Much wildlife activity has been observed at the Arlington Reservoir along the Munroe Brook toward Lexington, as well as in neighborhoods between wooded parcels such as near the Symmes Hospital site and Turkey Hill.

F. Scenic Resources and Unique Environments

Arlington's scenic areas contribute to the character of Arlington and remain cherished by town residents and visitors. Fortunately, the town's zoning bylaws protect most of these significant areas. Some of Arlington's unique natural and historical resources and features are shown in Map 4-4.

Situated in the Mill Brook Valley (the site of a major glacial river at the end of the Ice Age), Arlington is a landscape of many steep hills that provide scenic vistas both throughout town and into Boston and neighboring communities. Most streets are tree-lined, making Arlington feel less urban than neighboring Cambridge or Somerville.

With houses dating back to the eighteenth century, Arlington retains some of its colonial roots. Perhaps the town's biggest claim on American history is its role at the dawn of the American Revolutionary War, in the events of

April 19, 1775, when Arlington (then known as Menotomy) saw some of the fiercest fighting between the British troops and the Minutemen all along Massachusetts Avenue between Lexington and Cambridge. The area is now designated the Battle Road Scenic Byway and features numerous historic markers.

Scenic Landscapes

Views of Boston are available from vantage points atop the town's many hills on both sides of the Mill Brook Valley (Robbins Farm Park/Eastern Ave., Route 2 East, Mount Gilboa, Jason Heights, Turkey Hill, former Symmes Hospital property). The Robbins Farm playground area has such a good view of Boston that on July 4th hundreds of people gather on this steep hillside to view the Esplanade Fireworks — 8 miles away!

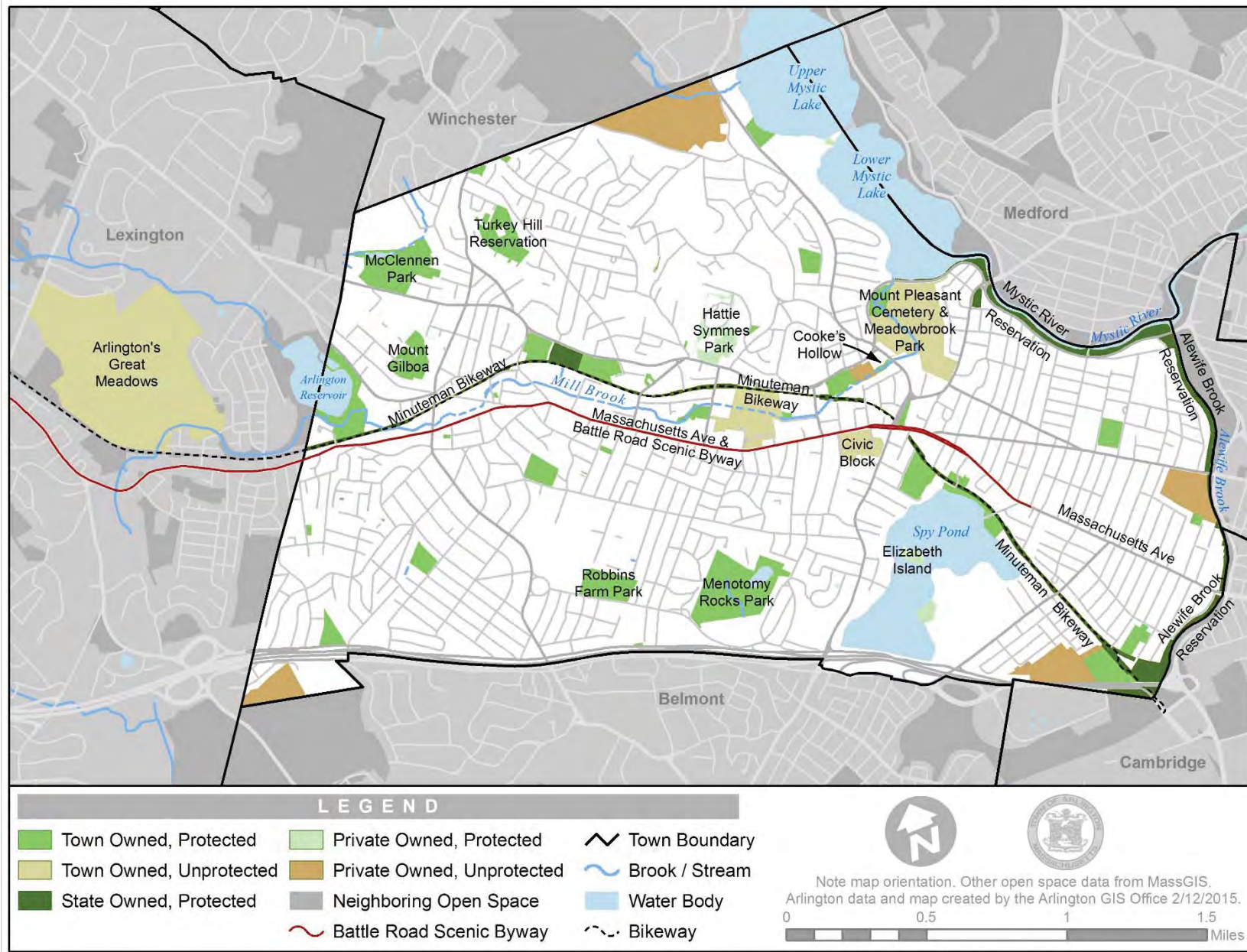
The Winfield Robbins Memorial Garden, enclosed by a wall as part of the Town Hall Civic Block, features a brick walkway through a formal garden of flowering trees and shrubs (designed by Olmsted Brothers) and a statue of a Native American (called "Menotomy Indian Hunter") by Cyrus E. Dallin, the famous sculptor who lived and worked in Arlington.

Views of the Mystic Lakes are seen most easily from Arlington at the Window-on-the-Mystic, a three-acre conservation site off Route 3, which is Arlington's only public waterfront on the Upper Lake. A bench has been provided by the Arlington Conservation Commission. Mt. Pleasant Cemetery also offers pleasing views of the Mystic Lakes.

Mystic River views are best from areas along the Mystic Valley Parkway (DCR land).

Spy Pond can be viewed from a walking path along the border of Route 2, from the Minuteman Bikeway, and from the recreational areas along the shore at Spy Pond Park.

Map 4-4. Unique Features in Arlington



Mill Brook forms the central spine of Arlington and is visible from numerous locations, including the Arlington Reservoir walking trail, the Minuteman Bikeway, Cooke's Hollow conservation land on Mystic Street, Mt. Pleasant Cemetery, and other pockets of unculverted stretches throughout the valley. Cooke's Hollow is the location of Arlington's only waterfall and was the site of the first grist mill dating to the 1630s.

Alewife Brook can be viewed from the Alewife Brook Parkway and from several neighborhoods in East Arlington.

Arlington Reservoir is reached from its beach area on Lowell Street, the walking trail around the reservoir, and the Mount Gilboa hillside. Parking is also available on the Massachusetts Avenue side next to the Drake Village elderly housing complex and Hurd Field, with access available by crossing the field.

Mount Gilboa and Menotomy Rocks Park have glacial rock formations and woodlands.

Arlington's Great Meadows is reached from the Minuteman Bikeway, and offers one of the most scenic areas along the bikeway. This 183-acre site is owned by Arlington, but it is located entirely within Lexington's borders.

Views of historic houses and buildings and their surrounding open space include the Jason Russell House (situated at Mass Ave. and Jason St., on a large landscaped lot), the Jefferson Cutter House (situated on Whittemore Park in Arlington Center), the Old Schwamb Mill complex (situated on Mill Lane in Arlington Heights), and the Whittemore-Robbins House (behind the Robbins Library in Arlington Center).

The Minuteman Bikeway is scenic because of landscaping, converted railroad bridges, historic landmarks, (e.g., Jefferson Cutter House), and abutting open space (e.g., Spy Pond Park playground, Hurd Field, Great Meadows). The Minuteman Bikeway has become one of the most used bicycle/recreational trails in the country, according to the Rails-to-Trails Conservancy, and helps to sustain a sense of community in the town.

Mount Pleasant Cemetery, the town's public cemetery, adds green open space near Arlington Center. Trees and rolling hills and many historic markers provide picturesque scenery and complement adjacent open space in Meadowbrook Park, which is protected by the Conservation Commission. Mill Brook runs through the cemetery and park and empties into the Lower Mystic Lake, creating wetlands that are home to many bird species.



Cleaning up around Mill Brook in Meadowbrook Park. Credit: David White

The former Symmes Hospital property was acquired by the town in early 2001 to control its redevelopment and to protect public access to this hilltop following construction. After a lengthy public process and delays associated with the downturn in the economy in 2008, construction of a large residential condominium and apartment project and a separate assisted living facility was finally completed in 2014. The project also included two new public parks at the top of the steep hill and woodlands

totaling nearly 9 acres, all of which is protected by a conservation restriction and is maintained by the development association. Hattie Symmes Park at the very top of the hill offers expansive views of Boston.

Major Characteristic or Unusual Geologic Features

Arlington is geologically interesting because of its dramatic changes of elevation and its hilly and rocky contours. The eastern part of town has elevations close to sea level, whereas elevations in western Arlington are often as high as 350 to 400 feet above sea level. Almost all the hills, including Turkey Hill, Mount Gilboa, Symmes, and Menotomy Rocks, contain rock formations left behind by melting glaciers after the Ice Age that are suitable for light hiking or rock climbing.

Areas of Critical Environmental Concern

According to the Massachusetts Areas of Critical Environmental Concern (ACEC) program, administered by the Executive Office of Environmental Affairs, Arlington does not have any areas of critical environmental concern.

Cultural, Archaeological, and Historic Resources

Arlington has many cultural and historic areas that attract both residents and visitors. Populated by many people in the visual, print, performing arts, and related fields, the town also has many organizations concerned with maintaining and enhancing its cultural and historic attractions and heritage.

Performing and Visual Arts

In Arlington Center, the renovated Regent Theater and the Arlington Friends of the Drama present live theater and other performance programs. In East Arlington, the popular Capitol Theater shows feature films and has an old-fashioned concession counter.

The Arlington Center for the Arts, located at the former Gibbs Junior High School in East Arlington, is a vibrant center with studios for visual, print,

and performing artists, as well as a resident theater (Arlington Children's Theater). This center offers arts classes for adults and children, and vacation/summer camp programs, as well as regular exhibits and special programs for the community. Open studio exhibits, literary readings, crafts, and drama and musical offerings make the center an exciting place for people of all ages

Throughout Arlington, churches, libraries, and other halls (Robbins Memorial Town Hall Auditorium, Arlington High School Lowe Auditorium) provide rehearsal and performance space for dance, choral, and other performing arts groups.

Arlington Public Art (APA) is a new collaboration of the Arlington Center for the Arts (ACA) and Vision 2020. The group works with the schools and other town departments to engage the community and enrich public spaces through original public art that celebrates and adds to Arlington's unique historic, cultural, natural, and human resources.

Festivals, Fairs, and Parades

The Town Recreation Department sponsors carnivals and other special programs for young children in the summer and winter.

East Arlington celebrates the Feast of the East, a springtime street fair sponsored by restaurants, art galleries, and other businesses in that neighborhood and business district.

In mid-September during Town Day, Arlington commemorates the birthday of Uncle Sam (Samuel Wilson), supplier to the U.S. Army, who was born in Arlington on September 13, 1766. This event includes a street fair, picnic, and fireworks.

Arlington hosts its own Patriot's Day Parade, (one of the largest local parades in Massachusetts), complete with appearances from "William Dawes" and "Paul Revere" in an annual re-creation of their famous ride in 1775. A Veterans' Day Parade is also held annually in November.

Cultural Organizations

The Cyrus E. Dallin Art Museum, founded in 1995 by a dedicated volunteer group of Arlington residents, is housed in the Jefferson Cutter House in Arlington Center. Many of Dallin's 60 Town-owned sculptures are exhibited there, and plans are underway to locate the collection to a larger facility.

The Arlington Cultural Council (ACC) supports public programs in the community that promote access, education, diversity, and excellence in the arts, humanities, and the interpretive sciences. The ACC is a local council of the Massachusetts Cultural Council (MCC) and disburses funds allocated by the MCC to successful grant applicants.

Arlington's Vision 2020 Culture and Recreation Task Group works to maintain and establish a variety of cultural and recreational activities.

The Commission on Arts and Culture (ACAC) is a new organization that seeks to preserve and promote the cultural and artistic resources in Town and work toward establishing Arlington as a significant cultural destination through promotion, education, advocacy, and related activities.

Archaeological Areas

In 1959, Arvid Carlson found a fossil tusk of a mastodon (a prehistoric cousin of the elephant) in Spy Pond (Balazs 1973). The Arlington Historical Society's Smith Museum now displays the 6 1/2 foot tusk, which is about 42,000 years old.

In 1988, members of Boston University's Archaeology Department, under contract with the Prince Hall Mystic Cemetery Association, performed a geophysical survey of Arlington's Prince Hall Mystic Cemetery, the country's earliest Black Masonic cemetery. People buried in this cemetery are said to be from the country's first Black Grand Lodge, formed in 1776 (Pendleton 1989). Survey findings included remains from structures that once belonged in the cemetery, such as the cemetery gate and an obelisk monument. A small park and historical marker now commemorate the cemetery, although most of the former cemetery land has since been developed.

During work in the early 1990s to renovate Spy Pond Field (Ritchie 1993), the town conducted archaeological excavations along the shores of Spy Pond. Some of the archaeological remains found in this area included prehistoric lithic chipping debris and structural remains from the nineteenth and early twentieth centuries ice industry buildings.

Historic Organizations

Several historic organizations in Arlington focus on the town's heritage, including:

- Arlington Historical Society (private nonprofit)
- Arlington Historical Commission (Town)
- Arlington Historic District Commissions (Town).

Historic Districts

Arlington has three multi-property National Register Districts, three National Register Districts encompassing three or fewer properties, and 57 properties that are individually listed in the National Register. The Arlington Center National Register Historic District encompasses eleven properties, including the historic Whittemore-Robbins House, the Robbins Memorial Town Hall, and the Winfield Robbins Memorial Garden. The Arlington Historical Commission has jurisdiction over this space.

Arlington also has seven local historic districts, comprised mostly of single-family homes with a combined total of 359 properties. These districts are under the jurisdiction of the Arlington Historic District Commissions (see Map 4-5).

- The Broadway Historic District
- The Central Street Historic District
- The Mount Gilboa/Crescent Hill Historic District
- The Pleasant Street Historic District
- The Russell Street Historic District

- The Avon Place Historic District
- The Jason Gray Historic District

The town also has demolition delay bylaws that protects individual historic structures within or outside of the historic districts.

Historic Sites and Attractions

In addition to the seven locally designated historic districts, Arlington has many historically significant individual properties and landmark sites, such as the milestone marking the ride of Paul Revere at the corner of Appleton and Paul Revere Road. Several of the town's key historic attractions are described below.

The Jason Russell House (ca. 1740), which is open for public tours, is the centerpiece of the town's history. On the evening of April 18, 1775, Paul Revere and William Dawes rode through Arlington warning the colonists that the British were marching to Concord. The following day, battles between British troops and Colonial Minutemen took place along Massachusetts Avenue in Arlington. As the British retreated through Arlington to Boston, colonists fired guns on the Redcoats marching down Massachusetts Avenue.

In the restored Jason Russell House, visitors can see several bullet holes from shots fired that day. Its owner, Jason Russell, was killed and is buried in the Old Burial Ground in Arlington Center, along with 11 other Minutemen (from Arlington and other Massachusetts communities) who died that day. A plaque on the property reads:

"The site of the house of Jason Russell where he and 11 others were captured, disarmed, and killed by the retreating British on April 19, 1775."

The Jefferson Cutter House (ca. 1830) was moved in 1988 to Whittemore Park, the location of one of the town's first houses in Arlington Center. This house now serves as the town's Visitor Center (sponsored by the Arlington Chamber of Commerce) and houses the Cyrus Dallin Art Museum, which displays many of his sculptures. The Cutter House has meeting and gallery

space in its basement, which provides public exhibition space for rotating exhibits by local artists throughout the year.

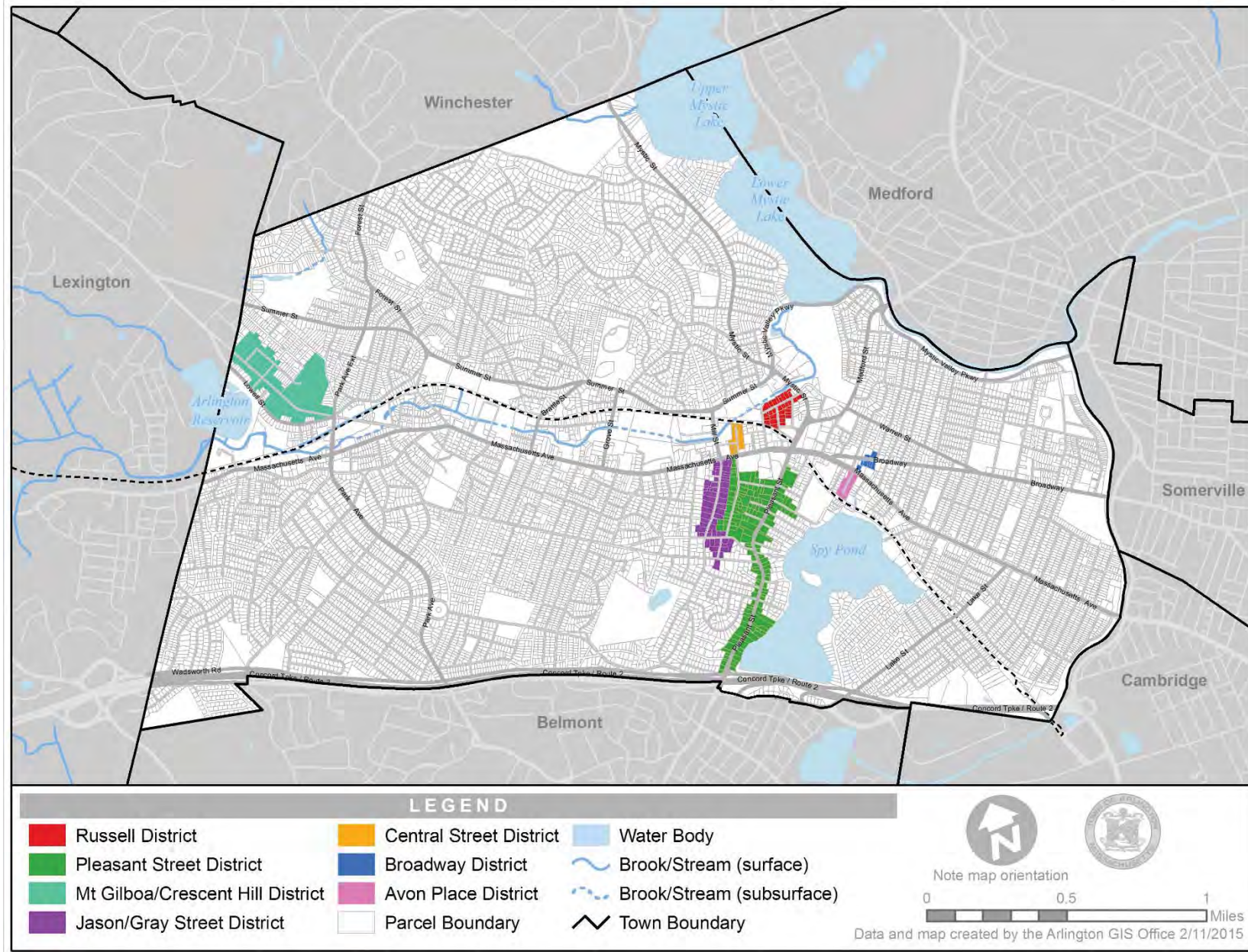


Jefferson Cutter House, home of the Cyrus Dallin Art Museum, in Whittemore Park. Credit: Ann LeRoyer

The Old Schwamb Mill (ca. 1861), now a working museum, is open for public tours and a variety of special events and educational programs. Visitors can view the manufacture of high-quality oval and circular wooden picture frames using original tools and processes. It is the only place left in the United States that practices this craft.

The "Uncle Sam" Memorial Statue commemorates Samuel Wilson, who was born in Arlington in 1766. It is located in a small park in the town center (at the intersection of Mystic/Pleasant Streets with Mass. Ave.).

Map 4-5. Local Historic Districts



G. Environmental Problems

Arlington's environmental problems and challenges are typical of other communities in northwest suburban Boston. The major types of environmental problems the town faces include hazardous waste site remediation, storm water and drainage control, and wetland enforcement matters. As the threats of climate change become better known and are experienced in this region, Arlington will have to consider policies and actions to introduce environmental planning for adaptation and mitigation of those changes.

Hazardous Waste Sites

Most of Arlington's required hazardous waste remediation efforts are the responsibility of private parties. According to the DEP's Reportable Release Lookup table, there have been 193 reported disposal incidents in Arlington since 1987. The vast majority of incidents reported to DEP were relatively minor or low risk, involving a response that did not require oversight by DEP or a Licensed Site Professional (LSP). Seven incidents are "Tier classified," however, meaning a type or an extent of contamination that poses a higher risk to the public. Arlington has no Tier 1A (highest risk) sites, but there are two Tier 1D sites and five Tier 2 sites, as shown in Table 4-4. Tier 1D is a default classification that DEP assigns when the responsible party misses a regulatory deadline, e.g., failing to file a report. Tier 2 sites warrant clean-up under LSP supervision, but they do not involve a high enough risk to require a DEP permit.

Solid Waste

Arlington has an extensive trash and curbside recycling program, including collection of seasonal yard waste, carried out under a contract with JRM Hauling and Recycling.

Table 4-4 – DEP Tier Classified Sites in Arlington

Site Name	Address	Contamination Type	Chapter 21E Status
Arlington High School	869 Massachusetts Ave.	Hazardous Material	Tier 1D
Dry Cleaners	1092 Massachusetts Ave.	Not Identified	Tier 2
Former Arrow Pontiac	25 Massachusetts Ave.	Not Identified	Tier 2
Residential Group Home	44 School St.	Oil	Tier 2
Mile Marker 132	Route 2 West	Oil	Tier 1D
MBTA Bus Station	1389 Massachusetts Ave.	Oil and Hazardous Material	Tier 2
TD Bank	880 Massachusetts Ave.	Hazardous Material	Tier 2

Sources: MassGIS, Chapter 21 Database, and Dept. of Environmental Protection, Reportable Release Lookup, September 2013.

DEP has identified six sites in Arlington that are subject to Activity and Use Limitations (AUL): remediated (and sometimes unremediated) sites that can be used for new purposes, subject to restrictions recorded with the deed (Table 4-5).

Table 4-5 – DEP Sites with Activity and Use Limitations (AUL)

Site Name	Address	Status	RAO Class	AUL Date
Arlington Catholic Playing Field	Summer St.	RAO*	B2†	2009-11-19
MBTA Parking Lot	1395-1425 Massachusetts Ave.	INVSUB**		2002-07-24
Brighams, Inc. Brighams, East Edge of Parking Lot	30 Mill St.	RAO	A2‡	2012-04-04
Unnamed Site	24 Central St.	RAO	A3§	1998-05-01
Unnamed Site	1386 Massachusetts Ave.	RAO	B2	2002-10-03
Unnamed Site	180 Mountain Ave.	RAO	A3	2012-10-15

Source: MassGIS.
Notes:
*RAO means "Response Action Outcome," or a report filed with DEP that actions taken have eliminated substantial hazards and no significant risk exists on the site.
**INVSUB means the RAO filed with DEP is invalid.
†Class B2: no remedial action required if AULs are implemented.
‡Class A2: Permanent solution achieved, but some contamination remains.
§Class A3: Permanent solution achieved; but some contamination remains; AULs have been implemented.

Environmental Problems at Open Space Sites

Two open space and recreational sites were known to contain hazardous waste contaminants in the soil and/or groundwater: the former Reed's Brook site and an Arlington High School athletic field site. Reed's Brook, a town landfill from 1959 to 1969, has undergone a Comprehensive Site Assessment as part of a closure process and was redeveloped and dedicated as McClennen Park in June 2006. The Arlington High School fields were investigated under DEP governance because of the chromium and manufactured gas products discovered in the soil. The Town reached an agreement with Massachusetts Electric and Honeywell for remediation of the site. Remediation began in 2004 and the fields were completed and have been in use since 2006.

In a "due diligence" review for the Town purchase of the Lahey Clinic/Health South Symmes Hospital site in 2002, the Town of Arlington was alerted to the presence of two hazardous waste areas on the property. One site was the result of oil storage leakage, and the second site was contaminated with elevator oil. The property was sold by the Town in June 2007, and the new owners performed the remediation. Nearly nine acres of the redeveloped site have been set aside as open space and recreational areas with a conservation restriction held by the Town's Conservation Commission and the Arlington Land Trust.

Water Resources

All of the water bodies in Arlington (particularly Spy Pond, Arlington Reservoir, Mystic Lake, Mill Brook, and Alewife Brook) face the threat of nonpoint pollution from roadway, house, business, and storm water runoff. Nonpoint pollution is pollution that is not traceable to a specific structure. For instance, a pipe that might dump volumes of pollution into the water body at one "point" would be traceable. Nonpoint pollution travels through runoff or sheets of rainwater that travel across the land. For example, Spy Pond receives roadway runoff from Route 2, and Arlington Reservoir receives pesticide and fertilizer runoff from nearby lands.

Refer to chapter 7 of this Plan regarding Water Resource Protection Needs for more details on the specific problems faced by each of Arlington's water resources.

5

Inventory of Lands of Conservation and Recreation Interest

Arlington's open space is a diverse combination of historical, natural, and recreational areas. This section discusses the most significant publicly and privately owned open space and recreational facilities and provides a listing in table format of many other parcels.

A. Brief History of Arlington's Open Space

Arlington's open space is a precious and limited resource that has been difficult to acquire, develop, and maintain. Much of the open space inventory that exists along the Mill Brook, for example, was reclaimed from abandoned millponds, dumping areas or fallow marshes. The Minuteman Bikeway now rests on what was once a railroad corridor. This rail/trail conversion took almost 20 years to complete after its original conception in the early 1970s and was dedicated in 1992. Today, thousands of people use the bikeway, which connects many of the Town's open and historical spaces, for both recreation and commuting. It is regularly identified as one of the Town's favorite open space resources.

Charles Eliot's 1926 Town Plan provided a thoughtful blueprint for preserving open space as a cohesive and important element of the Town's

layout. Some of Eliot's ideas from 1926 have lived on in subsequent open space plans of 1973 and 1979, but many of his ideas have not been realized, and some of those opportunities are now lost. Included in his plans was a linear park along Mill Brook and a Town Center park. Eliot also suggested offering the public complete access to Town water bodies. Comments and objectives in other sections of this 2015 Plan address both the linear park and water body access issues.

Open space has been and will likely continue to be a concern for the Town of Arlington. As an inner suburb of the Boston/Cambridge metropolitan region, Arlington has been nearly built out for decades, and its population is again increasing as many younger families and retirees want to live in an attractive town with public transportation close to the city. Concerns about encroachment on the few remaining natural areas remain as pressure for new housing and commercial development also increase.

Arlington has had no opportunity to avail itself of means designed for legal protections for forestry and agriculture and horticultural uses (Chapter 61, 61A, or 61B); there are no such properties in the Town. State-owned land managed by the Department of Conservation and Recreation (formerly Metropolitan District Commission/MDC) is part of the Alewife Reservation, and other DCR parcels in Arlington include the Ed Burns Arena and land around the Medford Boat Club on the Mystic Lakes. The state Department of Public Works and Massachusetts Water Resources Authority also manage a number of parcels, and Mass Highway owns the footpath along the southern edge of Spy Pond.

These state-managed parcels receive protection as Article 97 lands. Article 97 protected lands are those purchased for the purpose of parkland and conservation of open space and are under the jurisdiction of the Park and Recreation Department or the Conservation Commission. The protection that is offered to Article 97 lands is that a two-thirds vote of the local governing body (i.e., Town Meeting) as well as a two-thirds vote of the State legislature is required to transfer them to another purpose. A number of municipal properties, as listed in the accompanying table, also receive this protection.

Local bylaws add a level of protection in our efforts to preserve our recreational and undeveloped areas. Town Meeting in 2001 created an Open Space Zoning District to further protect recreational and undeveloped public land. Arlington's limited open spaces that are owned by the Town have been placed under the jurisdiction of a Town department or commission most appropriate for the designated use of the land; they are the stewards of those lands under their jurisdiction. By so doing, disposition of these properties must be brought before Town Meeting for public hearing and approval. Similarly, a change in zoning designation would require Town Meeting approval. Additionally, all change of outdoor use or new development for outdoor use requires an Environmental Design Review by the Arlington Redevelopment Board (Zoning Bylaw, Article 11.06).

B. Arlington's Open Space or Parcels and Facilities

Currently Arlington has more than 550 acres of publicly held open space, which includes Arlington's Great Meadows and some of the land surrounding the Arlington Reservoir located in the Town of Lexington (Map 5-1). An additional 118 acres are privately owned, of which the Winchester Country Club, Belmont Country Club, Arlington Catholic High School Field, and Kelwyn Manor Playground are the only parcels used for recreation. Of those, only the Winchester Country Club is open to the public for a fee.

The most significant changes in open space acreage since the 2007 Plan are the sale and protection of land at the former Symmes Hospital site and Elizabeth Island in Spy Pond. Both are privately held lands with state-approved conservation restrictions protecting all or part of the property for conservation and public access. At Symmes, 8.7 acres of the 18-acre site are protected in two landscaped parks and separate woodlands, and at Elizabeth Island the entire 2-acre island is owned by the Arlington Land Trust.

The narratives in this chapter briefly describe these and other large and noteworthy open spaces, including a brief history of the parcel and its conservation and/or recreational use. The first section describes three corridors and greenways that span much of the town, and the following section includes descriptions and site maps of 20 major open spaces and recreational facilities. All public and private open space and recreation sites in Arlington are listed in Table 5.2 at the back of this section.

Key to Sites on Map 5-1. Open Spaces and Recreational Facilities

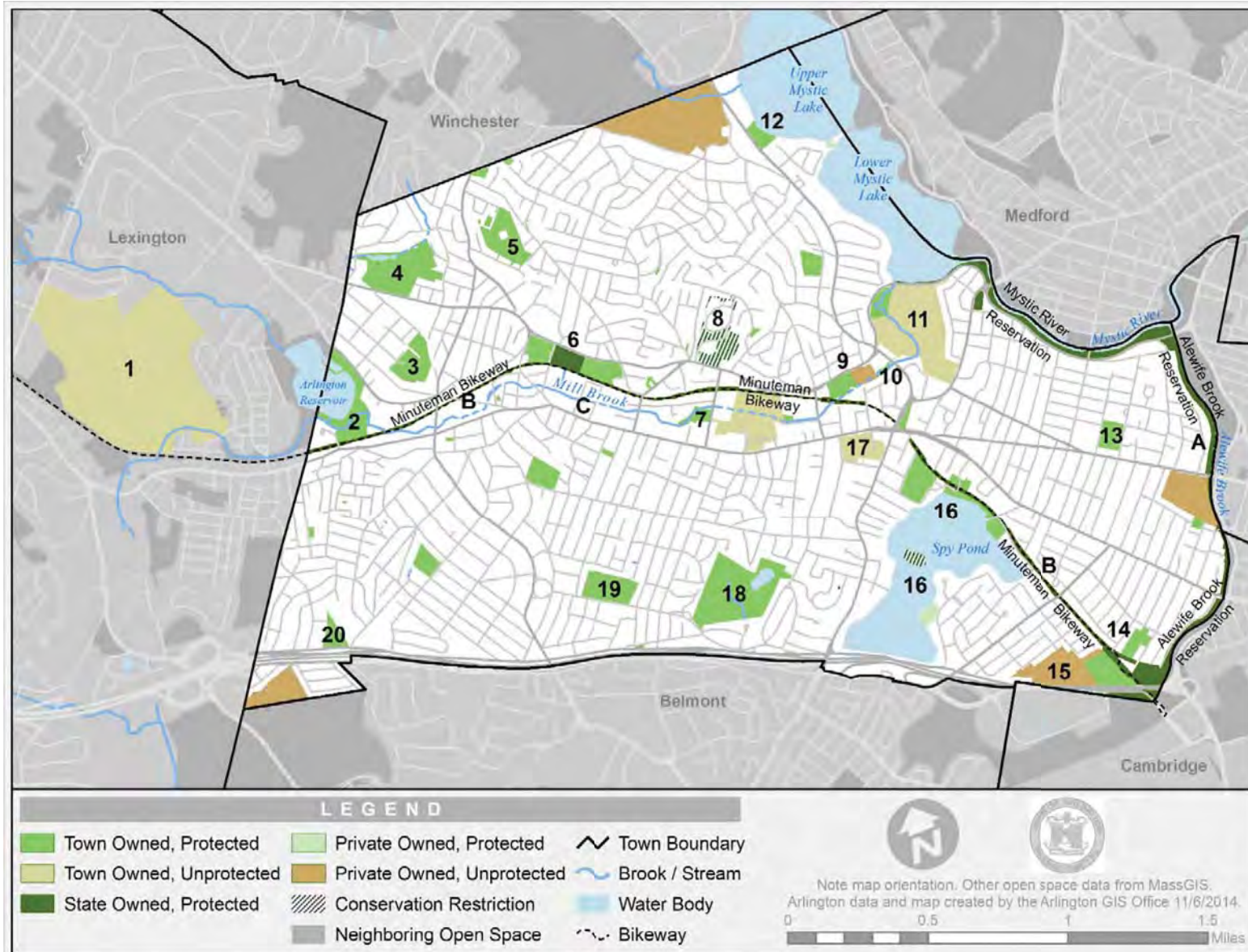
Corridors and Greenways

- A. Alewife Brook Reservation and Greenway
- B. Minuteman Bikeway
- C. Mill Brook

Open Spaces and Recreational Facilities

- 1. Arlington's Great Meadows
- 2. Arlington Reservoir and Hurd/Reservoir Fields
- 3. Mount Gilboa
- 4. McClennen Park
- 5. Turkey Hill Reservation
- 6. Summer Street Sports Complex
- 7. Wellington Park
- 8. Symmes Woods and Parks
- 9. Buzzell Fields
- 10. Cooke's Hollow
- 11. Meadowbrook Park and Mt. Pleasant Cemetery
- 12. Mystic Lakes and Window-On-The-Mystic
- 13. North Union Park/Lussiano Field
- 14. Thorndike and Magnolia Park and Fields
- 15. Mugar Land
- 16. Spy Pond, Spy Pond Park and Fields, Elizabeth Island, and Kelwyn Manor Park
- 17. Civic Block
- 18. Menotomy Rocks Park
- 19. Robbins Farm Park
- 20. Poets Corner

Map 5-1. Major Open Space Parcels and Recreational Facilities



A Alewife Brook Reservation and Greenway

Starting from the Minuteman Bikeway near Magnolia and Thorndike Fields, the Alewife Brook Greenway, completed in 2013, follows the Alewife Brook to Bicentennial Park at Massachusetts Avenue and then continues past Broadway to the intersection with the Mystic Valley Parkway near the Medford line. The greenway path and boardwalks are part of the Alewife Brook Reservation, a Massachusetts state park located in Cambridge, Arlington, and Somerville, managed by the Department of Conservation and Recreation (DCR). Most of this 120-acre urban wild is in Cambridge, including extensive wetlands, the Little River, and some wooded upland and meadow areas. The reservation serves as a habitat for numerous indigenous and migratory birds and other fauna including deer and coyote. Little Pond and Blair Pond provide spring spawning grounds for anadromous herring, which migrate from the Atlantic Ocean via the Mystic River and Alewife Brook, a tributary that drains the Little River.

The 1.4 mile long section of the reservation in Arlington runs beside the Alewife Brook on the town's eastern border, parallel to Alewife Brook Parkway. It offers a pleasant walk or bicycle ride, and the brook is accessible by canoe or kayak when the water level is high enough. The greenway links to the Fresh Pond Pathway and Watertown Greenway along the Charles River. To the north it links to Medford and the Mystic River Reservation.

Size: 120 acres

Managing Agency/Owner: Massachusetts Department of Conservation and Recreation

Current Use: Transportation/Recreation

B Minuteman Bikeway

The Minuteman Bikeway, a converted Boston and Maine Railroad corridor, was completed in 1992 after more than 20 years of planning and construction. Nearly 11 miles long, it begins in Cambridge (at the Arlington border near the Alewife MBTA Station), passes through Arlington and Lexington, and ends near Bedford Center. Each community is responsible for the section in its community, and efforts to strengthen the tri-community oversight are on-going. In 2000 the approximately three-mile section that passes through the entire length of Arlington was renamed the Donald R. Marquis/ Minuteman Bikeway in recognition of the former town manager who was an advocate for the creation of the Bikeway, and a strong supporter of it.

The bikeway travels through commercial, industrial, and residential areas and open spaces. In addition to being a popular commuter route, the bikeway is a linear park that connects significant historical sites and attractions as well as many conservation areas and park lands in Arlington, Lexington, and Bedford. Bikeway use by both commuters and recreational users has more than doubled since 2010; volunteers participate in seasonal user counts, and the DPW plows the Arlington stretch following winter storms so it is accessible to bikers and walkers.

Severe weather events, including flood damage and microbursts near Spy Pond, regularly damage the Bikeway surface, and the DPW has had difficulty keeping up with maintenance of both surface and shoulders. Local volunteers help with landscape maintenance and clean-up in spring and fall. Current issues affecting the Bikeway include extending the hours of use, roadway crossings, installation of lighting, drainage improvements, and surface maintenance.

Size: 30.1 acres

Managing Agency/Owner: Towns of Arlington, Lexington, and Bedford/ MBTA

Current Use: Transportation/Recreation

C Mill Brook

Mill Brook is formed by the confluence of Munroe and Sickie Brooks (a.k.a. Cataldo Brook), which flow south and east from Lexington and meet next to the Arlington Reservoir. Arlington's Great Meadows in East Lexington is a large wetland that contributes to the source and flow of water in Mill Brook. Munroe Brook was dammed in the early 1870s to form the Arlington Reservoir, and spillways now control the amount of water discharged into Mill Brook near the Lexington boundary.

Mill Brook drops about 140 feet on its way from the Reservoir to Lower Mystic Lake over a distance of about 2.7 miles. Mill Brook flows parallel to Massachusetts Avenue and the Minuteman Bikeway eastward to Arlington Center, where the brook turns northeastward to cross Mystic Street and flow through Mount Pleasant Cemetery into Lower Mystic Lake. More than 40 percent of the brook is culverted and 30 percent is channelized but exposed. Only a few short sections of the brook are in an open, natural condition. The entire brook is in need of substantial restoration and remediation to improve biodiversity, water quality, drainage, and flood control.

About 35 percent of the land within 100 yards of the brook is owned by the Town of Arlington, and these public areas are used primarily for open space and recreational activities (e.g., playing fields, tennis courts, climbing wall, playgrounds, and parks). The areas not owned by the Town are largely industrial and commercial properties, a few historical sites, and several residential neighborhoods.

Proposals for restoring Mill Brook and creating a park on its banks date back to the Town's Comprehensive Plan of 1926, which recommended a series of pocket parks along the brook. Subsequently the Town acquired the abutting areas now known as Wellington Park and Cooke's Hollow. A 1977 study for the Arlington Conservation Commission resulted in a general plan for developing such a linear park. As subsequent development occurred in the Mill Brook area, some special permit approvals were "conditioned" with requirements that could contribute to the linear park concept. Direction and momentum for the park has always been

fragmented, however, and the Town has not persevered to bring the park to fruition. In 2014-2015 the Town is undertaking a master plan process, and revival of the Mill Brook Linear Park idea is an element in the plan.



Mill Brook and the waterfall at Cooke's Hollow. Credit: Brian Barber

Arlington's Great Meadows

The largest open space resource owned by the Town of Arlington, containing approximately 183 acres of land, is located entirely in Lexington as a result of a water supply management system installed during the mid-nineteenth century and later discontinued. The largest part of Arlington's Great Meadows is a flat, marshy plain containing a series of hummocks. Surrounding the plain are wooded uplands criss-crossed by walking trails. The Minuteman Bikeway forms the southern border and offers the most direct access to the trails. Other borders are mostly residential and there are only a few access points.

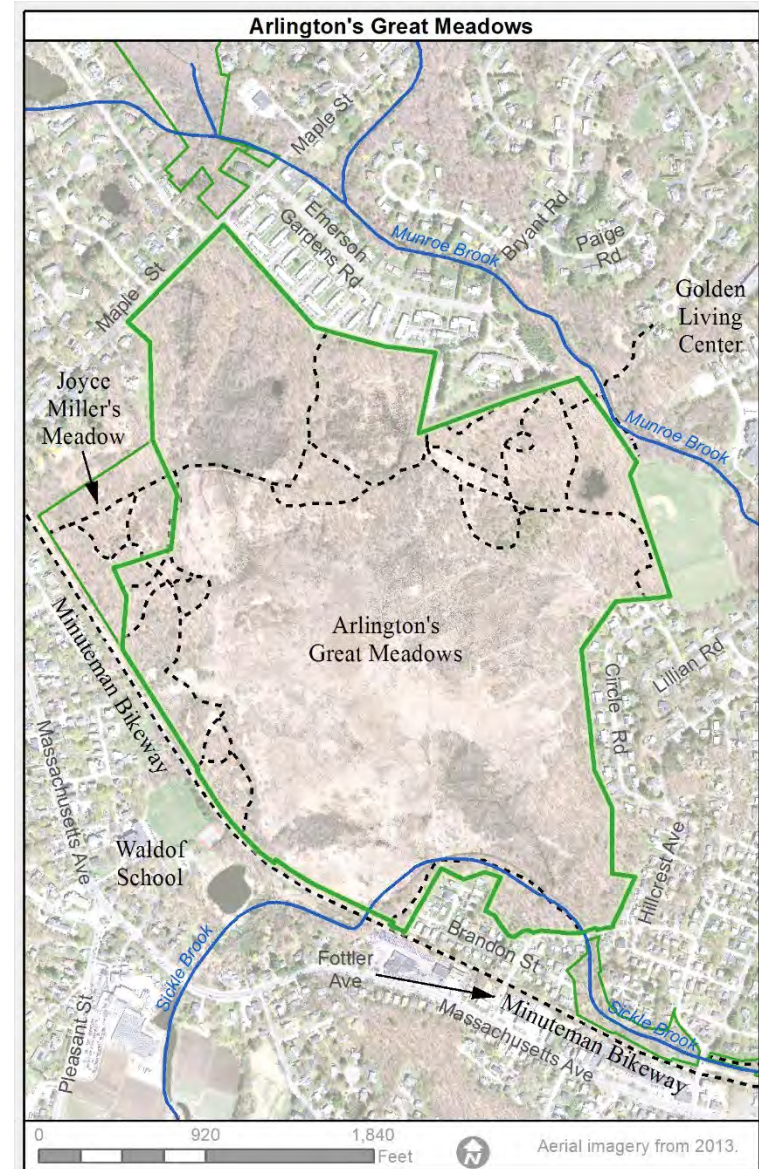
More than 50 percent of the site is certified vegetated wetland. The Lexington zoning bylaw protects the wetlands in Great Meadows by zoning them as Wetland Protection District (WPD). The Lexington Conservation Commission and various citizen groups have taken an active role in assuring that the Great Meadows remain in its natural state. A consultant was hired by the Arlington Conservation Commission in 1999 to prepare an inventory of the natural resources of this area, along with some management recommendations (Clark 2001).

Since publication of the report, a very active Friends of Arlington Great Meadows (FoAGM) organization of Arlington and Lexington residents has formed to serve as stewards of the property. The group has completed extensive surveying of plants and animals, organized annual bird watching and geology walks, and has improved the visitor support facilities and better protected the environment in the Meadows by building a series of boardwalks. A recent project has been controlled clearing of an upland meadow area to provide a more open habitat for wildlife and visitors. For information about this and other projects, visit the Friends website at www.foagm.org/.

Size: 183.3 acres (entirely in Lexington)

Managing Agency/Owner: Board of Selectmen/Department of Public Works/Town of Arlington

Current Use: Conservation/Passive recreation



Arlington Reservoir and Hurd Reservoir Fields

The Arlington Reservoir site incorporates a variety of natural and recreational resources. Created in the early 1870s to supply Arlington's municipal water system, the Reservoir has not been used for public drinking water since the Town joined the Massachusetts Water Resources Authority (MWRA) in 1899, yet the name "reservoir" remains in use. It is a 65-acre man-made recreational and flood-control pond on the Arlington/Lexington border in the northwestern section of Town. Less than half of the open water is in Arlington, yet the Town owns and manages the entire perimeter as well as part of Munroe Brook, its primary source whose watershed includes Reed's Brook and Arlington's Great Meadows (located in Lexington). Several Lexington storm drains also send water into this water body.

The Reservoir has a mile-long wooded walking trail around its circumference that is open to the public. At different times throughout the year, the Reservoir is a recreational resource for walking, birding, jogging, and cross-country skiing, and the Arlington High School cross-country team uses the trails for meets and training. The Reservoir provides a diverse habitat for wildlife, and nearly 200 species of birds have been sighted there.

In 1935, the Arlington Board of Park Commissioners engaged the national Works Progress Administration (WPA) to develop a sandy beach on the Reservoir's eastern shore. The Town significantly improved this beach in the late 1970s, adding filters and an embankment to separate the swimming area from the rest of the Reservoir. The beach now includes a filtered/chlorinated swimming area with a ramp for people with disabilities, a bathhouse, vending machines, a concession area, and playground. The beach is supervised by certified lifeguards and other beach staff when open. Boston.com recently listed Reservoir Beach as one of the state's top ten swimming holes.



The earthen dam around the southern edge of the Reservoir is some 600 yards long and as high as 14 feet, although the water level is kept much lower except during the swimming season. The water discharges into Mill Brook through a sluice gate.

In 1999, the Massachusetts Department of Environmental Management (DEM) expressed concern about dam safety and recommended that the Town cut down all the trees and shrubs along the dam structure and riprap the bank. Working in collaboration, Town officials, engineers from Weston & Sampson and members of the Reservoir Committee of Vision 2020 Environment Task Group partnered to accomplish three goals: improve dam safety, enhance recreation, and preserve the natural landscape. The work succeeded in balancing public health and safety with public interests and environmental issues and received two prestigious awards, from the American Public Works Association and the American Consulting Engineers Council of Massachusetts (ACEC/MA).

As part of the dam rehabilitation project, funding was committed for planting over 100 trees. An anonymous donor contributed additional funds toward the creation of a habitat garden of native plants, and volunteers from the Reservoir Committee, working closely with the Town's DPW, began construction of a Wildlife Habitat Garden along both sides of the new spillway in 2010. The garden uses native plants that attract wildlife and provides an attractive and educational opportunity for the many people who visit it.

A serious water chestnut infestation is being controlled by manual and machine harvesting. The Conservation Commission, Department of Public Works and the Reservoir Committee are actively monitoring the water quality for additional invasive waterweeds. The Reservoir Committee maintains a website with both historical and current information: www.arlington2020.org/reservoir.

In recent years, the Town has lost storage space for winter snow removal and has been using the parking lot of the Arlington Reservoir for temporary storage. There is some concern that the continued use of the area for this

purpose could have a negative effect on the recreational uses and water quality of this valued natural resource area.

In the summer of 2013, the Park and Recreation Commission conducted a survey of residents to determine the future needs of the Reservoir Beach area. Within the next few years, it is expected that a multi-year, multi-phase capital project will be needed to address the aging infrastructure of the beach and to upgrade the amenities. For the short-term, new picnic tables were added, along with fresh coats of paint to the facilities, and efforts to curb the geese from fouling the sand and water continue each season.

Hurd and Reservoir fields, adjacent to the Reservoir off Drake Road, offer two softball/youth baseball diamonds. Hurd Field is lighted and used for adult softball play in addition to youth baseball and softball. An open field area is used for soccer, and there is access to the Minuteman Bikeway. The Town received a U.S. Environmental Protection Agency (EPA) grant for a Porous Pavement Education Project at Hurd Field, which funded the installation of a new porous parking surface at the field. A rain garden was also installed in 2013 with support from the Town and the Mystic River Watershed Association.

Arlington Reservoir:

Size: 21.3 acres in Arlington (65 acres total in Arlington and Lexington)

Managing Agency/Owner: Department of Public Works/ Park and Recreation Commission/ Town of Arlington

Current Use: Passive and active recreation/Flood control/Conservation

Hurd and Reservoir Fields:

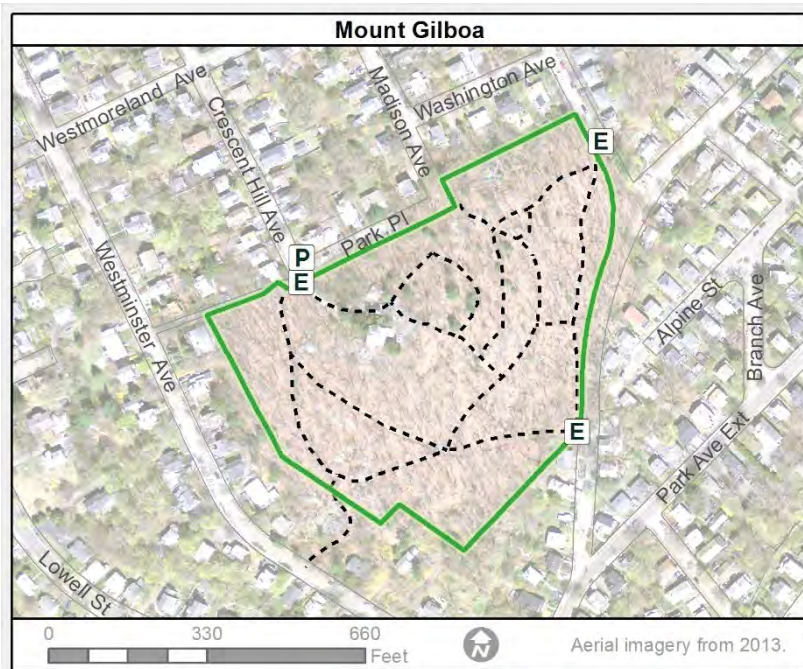
Size: 6.1 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Active and passive recreation/Conservation

Mount Gilboa

Mount Gilboa is a tall, tree-covered hill with a single house on top. The house belongs to the Conservation Commission and is rented by the Town. Discussions about the future of the house as a Town-owned asset are underway, including its possible removal to create a vista park at the top of hill. Trails through the surrounding woods are used regularly for walking and bird watching.



Size: 10.7 acres

Managing Agency/Owner: Conservation Commission/Town of Arlington

Current Use: Passive recreation/Conservation

McClennen Par

Arlington reacquired this 20-acre site from the Federal Deposit Insurance Corporation in March 1995. Before 1959, Reed's Brook was agricultural land, and from 1959 to 1969 Arlington operated a landfill in this area. The Town closed the land pursuant to Massachusetts Department of Environmental Protection (DEP) policies and regulations while planning for its restoration and reuse. The Reed's Brook site is complicated by the fact that the brook runs through the site and eventually flows into the Arlington Reservoir and then to the Mill Brook. The brook was once enclosed in a culvert, but part of the culvert collapsed and has since been excavated to alleviate a flooding problem that affected the adjacent residential neighborhood.



As a result of many studies, the Arlington Redevelopment Board determined that the site was most valuable to the Town as open space and recommended to the 1997 Town Meeting that the land be developed for conservation and recreation use. Town Meeting appropriated \$5.8 million and the area was redeveloped to address the flooding problems, properly close the landfill, and develop new open space uses. The plan proposed to completely replace the storm drain system, create a permanent retention pond and new wetland areas to serve as wildlife habitat, prevent exposure to landfill materials, construct two soccer fields and one baseball field, many trails, picnic areas, tot lots, and totally mitigate any existing environmental issues.

McClennen Park was dedicated on June 3, 2006 in tribute to former Arlington Planning Director Alan McClennen. The result is a wonderful new open space with something for everyone to enjoy, from the toddler playground to the sports playing fields and skateboarding area to the walking paths around the pond and wetlands. The State reconstructed Summer Street, and an off-street parking area was added.

A community garden is the only element of the original plans that is not included, because it was determined that digging in the garden might penetrate the cap over the underlying trash dump. Interest exists in adding a dedicated dog off-leash recreation area (OLRA) to the amenities at the property, which would require mediation with several parties in Lexington and a permit from the state DEP.

Size: 20.3 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Passive and active recreation

Turkey Hill Reservation

Turkey Hill Reservation contains the Turkey Hill water tower and land immediately surrounding it, which are owned by the Massachusetts Water



Resources Authority (MWRA). The Park and Recreation Commission has jurisdiction over most of the land beyond the water tower; the Conservation Commission also oversees several small parcels. This area is heavily wooded, with many internal trails and foot paths that connect with adjacent roads, including a main access point at Dodge Street. Security concerns of the MWRA resulted in an attempt to limit access to the area, but discussions held with neighborhood residents, the MWRA and State and Town officials resulted in an acceptable policy for continued public access during daylight hours. A stewardship group organized through the Conservation Commission Land Stewards Program cares for the site.

Size: 10.7 acres

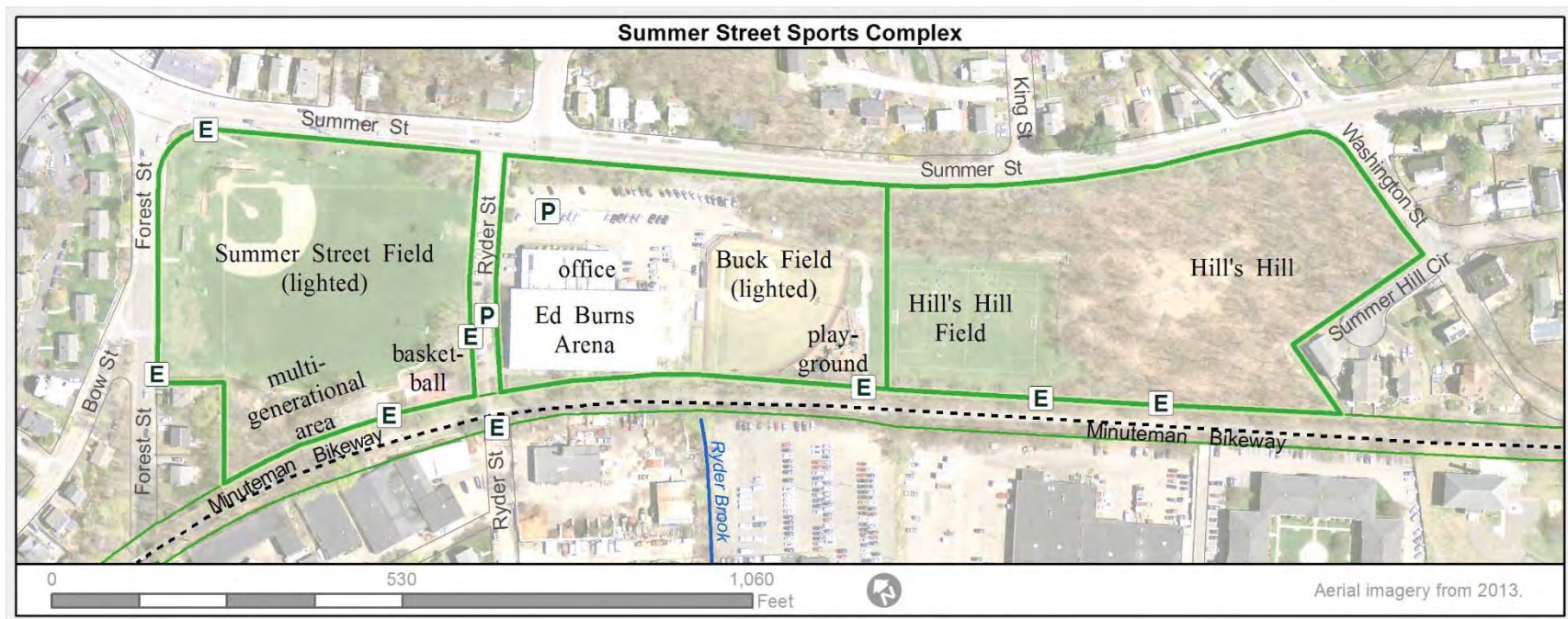
Managing Agency/Owner: Park and Recreation Commission /Conservation Commission/Town of Arlington/Massachusetts Water Resources Authority

Current Use: Recreation/Conservation

Summer Street Sports Complex

This major multi-sport complex at 422 Summer Street includes the Ed Burns Arena, Summer St. (a.k.a. Kenny) Field, Buck Field and Hill's Hill Field, and natural wooded areas. The property is located adjacent to the Minuteman Bikeway and the baseball, field hockey, youth baseball/softball and multi-use fields are used by local high school and youth sports organizations. Baseball and youth baseball fields are lighted for evening play. The area also includes a multi-generational recreation area with fitness stations, tot play equipment, a bocce court, and basketball court. A completely handicapped accessible children's play structure with a zero-entry ramp is a major attraction that was completed within the last few years.

The state-owned Ed Burns Arena is also the Arlington Recreation Department's headquarters. Built in 1971, the facility originally offered a





High School Hockey at the Ed Burns Arena. Credit: Ann LeRoyer

seasonal regulation-size skating rink. The Ed Burns Arena is now a year-round, multi-sport facility with an ice rink that operates during the fall and winter, and batting cages, indoor soccer programs, and summer camps in the spring and summer. It is used for a variety of special events and serves as home facility for the Arlington Hockey and Figure Skating Association and Arlington High School and Arlington Catholic High School boys and girls hockey teams. Public skating as an activity for both adults and children has grown significantly over the past several years, and the department offers a variety of instructional programs and special skating events. Skate rentals, sharpening and concessions are also offered.

Size: 12.7 acres (fields) and 2.4 acres (arena and parking)

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington and Department of Conservation and Recreation/Commonwealth of Massachusetts

Current Use: Active and passive recreation

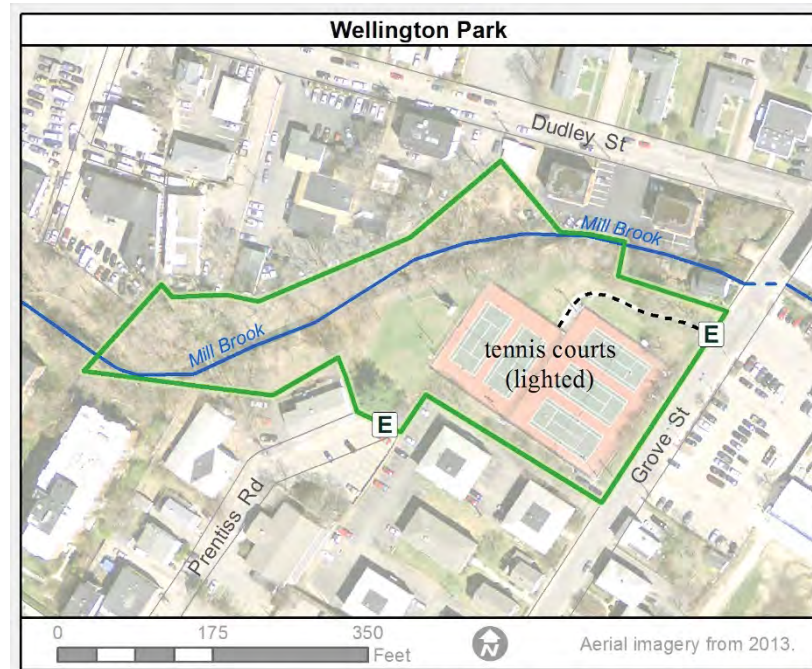
Wellington Par

The Ethel Wellington Park is located on Grove St. across from Arlington's Department of Public Works headquarters. The park has five lighted tennis courts, which were renovated in 2011, and an adventure/ropes course that was installed with funds from a Carol M. White federal physical education grant to the Town to help promote health and wellness programs in the community. Overgrown natural areas that abut Mill Brook are in need of attention and have great potential to become an attractive passive recreation area. On-street parking is available.

Size: 3 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Active and passive recreation

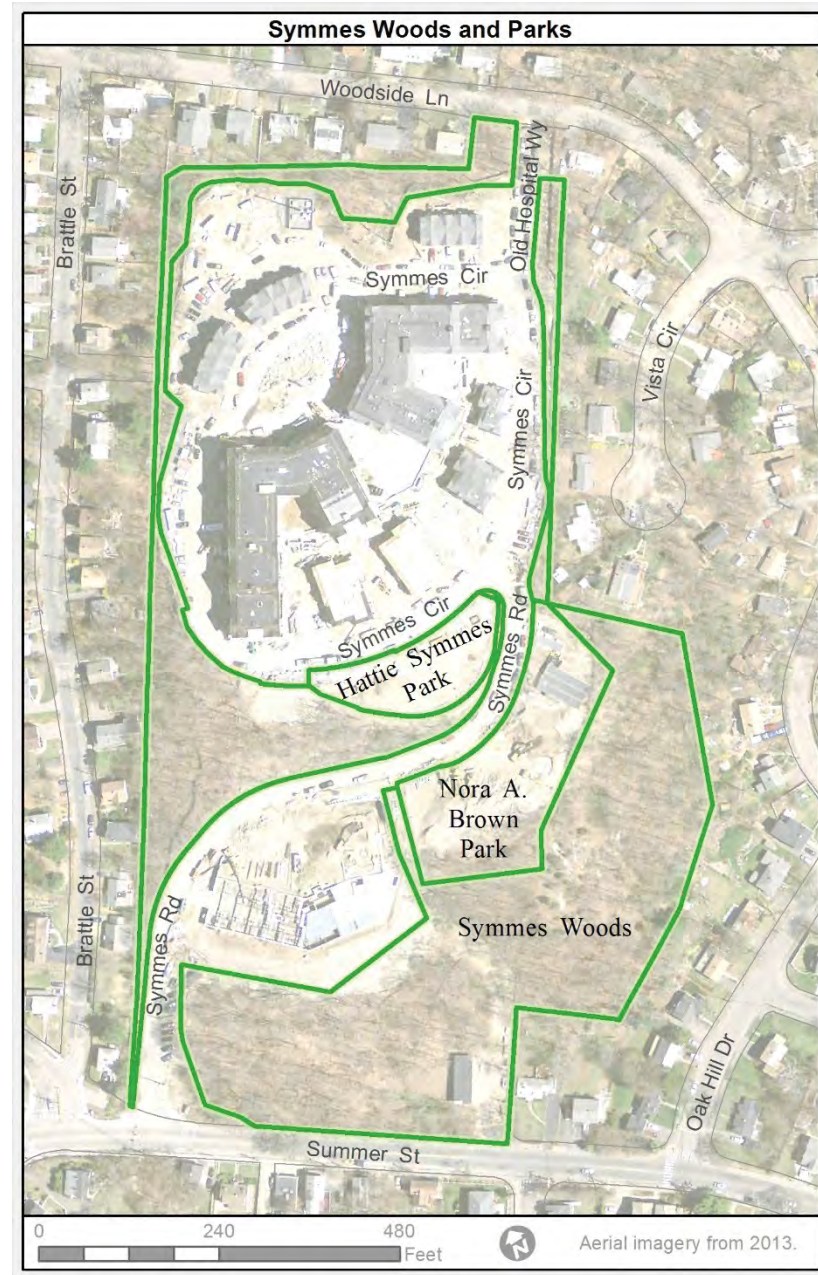


Symmes Woods and Parks

On March 31, 2001, by a margin of 64 to 36 percent, Arlington voters approved a debt exclusion to allow the Town to acquire the entire 18-acre Symmes property off Summer Street from owners Lahey Clinic and HealthSouth, in order to be able to control development of the site. The property included several former hospital buildings, a vacant former nurses' residence, several acres of parking lots, and about nine acres of undeveloped land, mostly steep wooded slopes. The purchase and sale was completed in April 2002, and the property was put under the Arlington Redevelopment Board (ARB)'s jurisdiction. A Symmes Advisory Committee (SAC) created by Town Meeting held numerous meetings to help evaluate the project and the various private development options for it. The SAC submitted its final report to the ARB and Town Meeting in April 2003, and the ARB and private development entity Symmes Redevelopment Associates (SRA) finalized a Land Disposition Agreement in June 2007. Town Meeting subsequently approved zoning changes necessary for that development.

After a lengthy public process and delays associated with the downturn of the economy in 2008, a new owner began construction in the spring of 2012. By 2014 the developer, Arlington 360 LLC, had completed a 164-unit apartment complex and 12 townhouse condominiums. Arlington 360 sold a two-acre portion of the Symmes site half way up the hill to Shelter/Brightview Arlington for a 90-unit assisted living facility. Construction began in the spring of 2013 and was completed by the summer of 2014.

The most prominent open space features of the development are two parks and about six acres of woods and buffer zones. The half-acre Hattie Symmes Park at the top of the hill has commanding views of Arlington and Boston to the east. Named for the daughter of Stephen Symmes who founded the hospital in her honor, the park features pathways, benches, and extensive landscaping. A second hillside park of almost two acres abuts the upper boundary of the Symmes Woods. It is designed for passive recreation with views of the Boston skyline framed through the trees. Named for Nora A. Brown, the long-time head of the nurses' facility at the





View of Boston overlooking Nora A. Brown Park. Credit: Richard A. Duffy

hospital, it contains pervious pathways, mowed strips within an open meadow area, and landscaped beds, as well as some benches and picnic tables.

Both parks are maintained by the development company at its expense, but are open to the public under the same rules and regulations as those of other Town parks. The Symmes Woods covers the relatively flat area between Summer Street, the new Nora Brown Park, and the assisted living facility. This former municipal tree farm is dominated by Norway Maple trees. After the area is restored, this woodland will be accessible to the public for passive use.

The Arlington Land Trust and Arlington Conservation Commission have responsibility for guiding the long-term oversight of the woodlands and will foster the creation of a "Friends of Symmes Conservation Area" group including neighbors and new residents of the development who will participate in managing the woods. Management decisions likely will include whether and where to locate foot trails and what new species of trees should be planted to increase the health of the woods.

Management of the Hattie Symmes Park, Nora A. Brown Park, and Symmes Woods is governed by a management plan agreed to by the developers, the Arlington Redevelopment Board, the Arlington Land Trust, and the Arlington Conservation Commission. When all the construction work is completed, the parks and woodlands will be protected by a Conservation Restriction (CR) and Public Access Easement held by the Land Trust and Conservation Commission. The CR, which offers permanent legal protection for the land, was signed off by the Commonwealth's Executive Office of Energy and Environmental Affairs and by the Town of Arlington in 2014. Small property markers designate the CR boundaries.

Size: 8.7 acres of the total 18-acre site

Managing Agency/Owner: Arlington 360 and BrightView Assisted Living

Current Use: Conservation/Passive recreation



Symmes Woods on Summer Street. Credit: Ann LeRoy

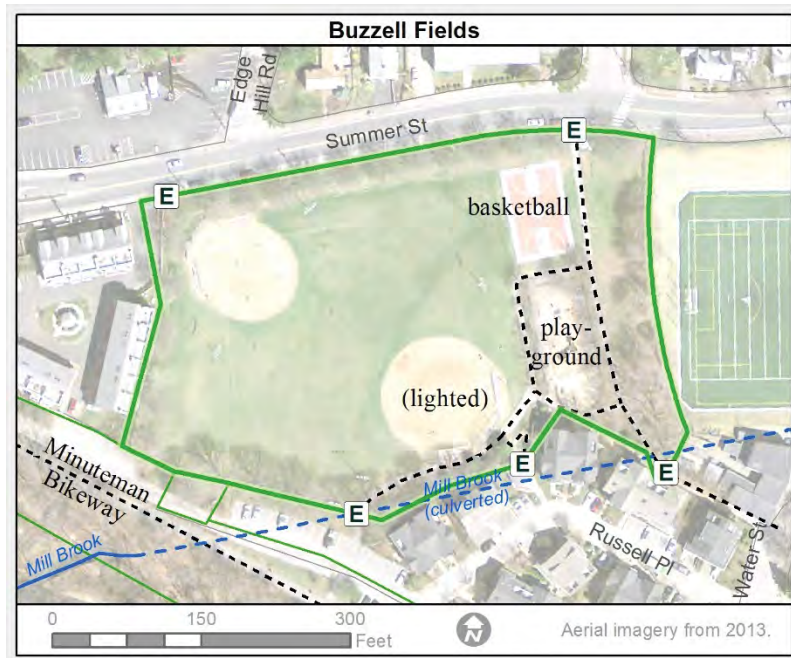
Buzzell Fields

Located on Summer St. just beyond the intersection with Mill St., this former mill pond and later town landfill was redeveloped into a recreation site and dedicated to Navy Lieutenant Richard H. Buzzell, a 1961 graduate of AHS killed on the battlefield during the Vietnam War. The park has two youth baseball/softball fields with outfield lights for night play, a basketball court, picnic tables, and a playground with slides, swings, and a sandbox with digging tools. On-street parking and access to the Minuteman Bikeway is available. In 2008, field renovations were completed that included drainage work, the installation of irrigation, and replacement of sand surfacing at the playground.

Size: 3.6 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Active recreation



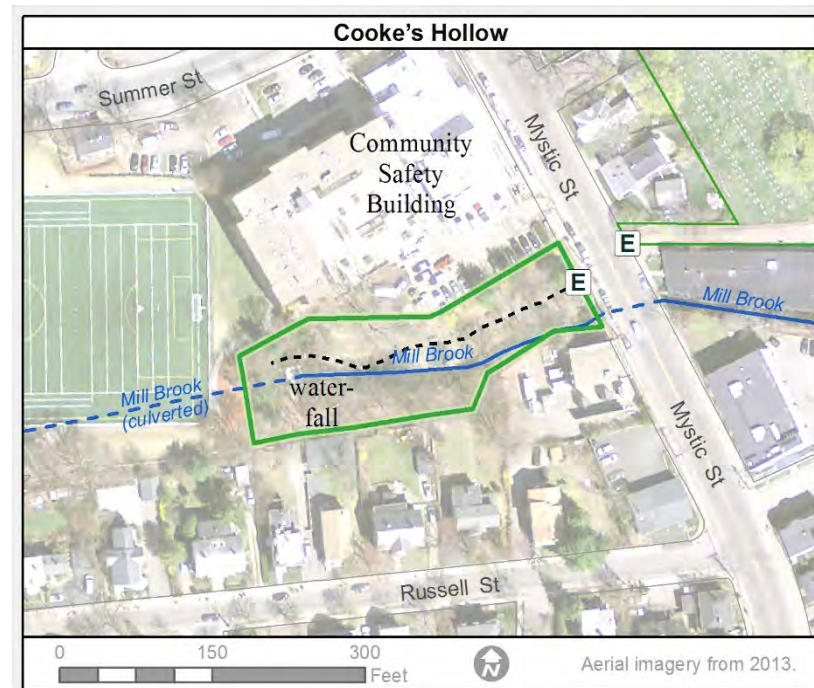
Cooke's Hollow

Cooke's Hollow is a long, narrow, partially landscaped area on both sides of Mill Brook near Mystic Street. This small park with the Town's only waterfall provides scenic vistas and park benches. Arlington acquired Cooke's Hollow from several sources in 1969, and the Arlington Garden Club has been instrumental in developing gardens and public access at the site. The area has deep historical and cultural roots dating back to the 1630s when Captain George Cooke built the first water-powered grist mill in Arlington (then Menotomy and part of Cambridge). Although potentially an attractive location it needs a lot of remediation work. It is also adjacent to a very busy road and has limited public access.

Size: .75 acres

Managing Agency/Owner: Conservation Commission/Town of Arlington

Current Use: Passive recreation



Meadowbrook Park and Mt. Pleasant Cemetery

Meadowbrook Park is mostly wetlands, located adjacent to Mt. Pleasant Cemetery at the delta of the Mill Brook where it opens to the Lower Mystic Lake. The Conservation Commission managed an environmentally sensitive landscaping project to create a better wildlife habitat and make the area more accessible for walking and bird watching. The banks were stabilized and a deep marsh was dug, while protecting the integrity of the wetland area. Invasive reeds were removed in the fall of 2000 and native wetland and aquatic plants were planted around the marshes during the spring of 2001. The Conservation Commission organizes an annual cleanup event. Land stewards monitor this site, and there have also been some scout projects to improve visitor access.

Meadowbrook Park

Size: 3.3 acres

Managing Agency/Owner: Conservation Commission/Town of Arlington

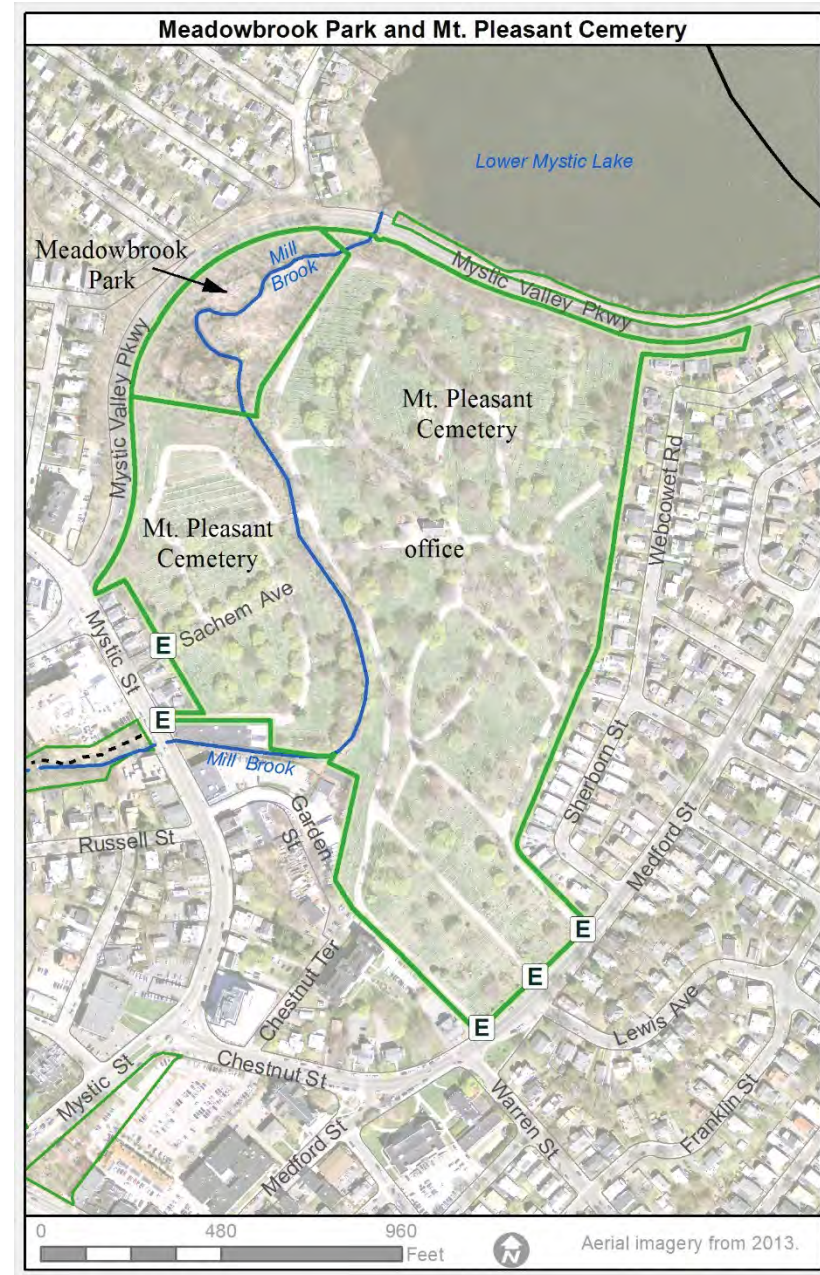
Current Use: Conservation

Mt. Pleasant Cemetery

Size: 58.9 acres

Managing Agency/Owner: Cemetery Commission/Department of Public Works/Town of Arlington

Current Use: Cemetery



Mystic Lakes and Window on the Mystic

The Upper and Lower Mystic Lakes are glacial lakes that straddle the boundaries of Arlington, Winchester, and Medford. While there is ample access along the northern shore in Medford and Winchester from Mystic Valley Parkway, most of the shoreline in Arlington abuts roadways or privately held land with developed house lots. In recent years the lakes have become known for seasonal sightings of Bald Eagles, Red-Tailed Hawks, Kestrels, and other raptors, as well as many species of ducks, shorebirds, and other fauna.

Window-On-The-Mystic is a three-acre waterfront parcel offering trails and views of the Upper Mystic Lake near the Winchester line. Arlington purchased this parcel in 1975 from private owners, with partial funding from Federal Community Development Block Grant Funds and the Massachusetts Department of Natural Resources. A recent Eagle Scout project made some access improvements to the site.



View of Upper Mystic Lake from Window-on-the-Mystic. Credit: David White



Mystic Lakes

Size: 99 acres in Arlington

Managing Agency/Owner: Department of Conservation and Recreation/Commonwealth of MA

Current Use: Recreation/Conservation

Window-on-the- Mystic

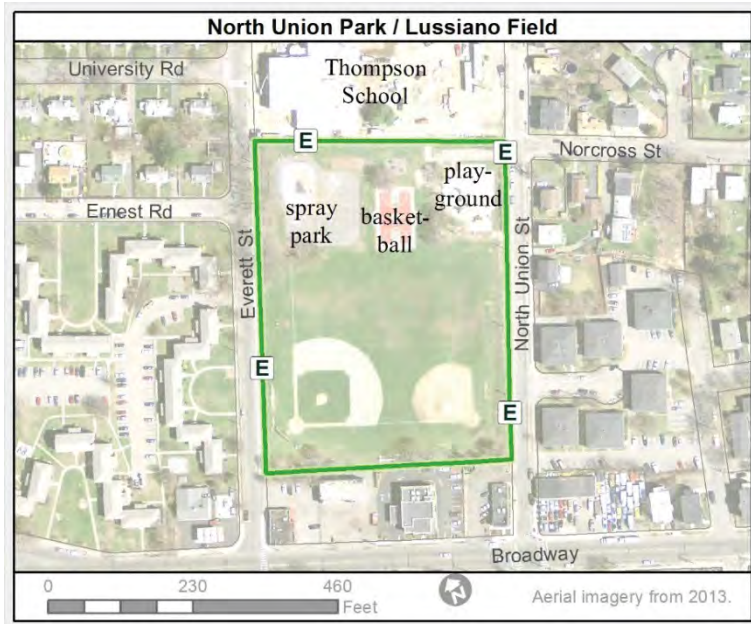
Size: 3 acres

Managing Agency/Owner: Conservation Commission/Town of Arlington

Current Use: Conservation/Passive Recreation

North Union Park / Lussiano Field

Located on North Union St. in East Arlington next to the rebuilt Thompson School, the area has a neighborhood playground, basketball court, picnic tables, softball/youth baseball field, baseball field, and multi-purpose field used for soccer. In 2014 the spray pool underwent a major renovation to upgrade all water features and enhance landscaping, access, and amenities. It is generally open from June to August. On-street parking is available.



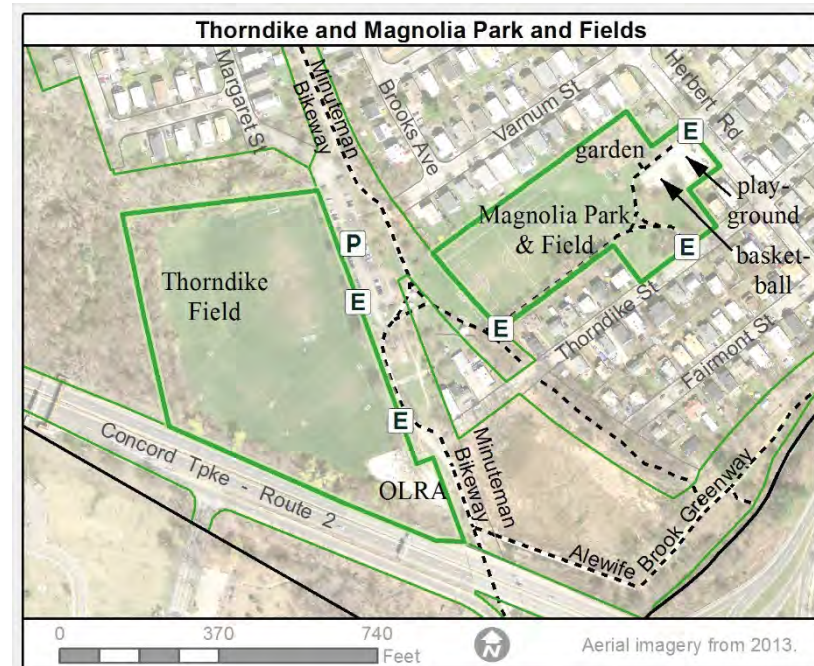
Size: 5.0 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Active and passive recreation

Thorndike and Magnolia Park and Fields

Located in southeastern Arlington close to Route 2 and the Alewife MBTA station in Cambridge, several multi-purpose fields are used for soccer and lacrosse, and a dedicated off-leash dog recreation area (OLRA) was established in 2012 next to the Thorndike fields. Magnolia Park has a children's playground, community gardens, a basketball court, and a multi-purpose sports field. Both properties have direct access to the Minuteman Bikeway. The Town's first porous pavement parking area project was completed by the Park and Recreation Commission at Thorndike Field. Located at the end of Margaret St., it provides parking for the Thorndike and Magnolia facilities and the Minuteman Bikeway. At the end of Magnolia St. there is limited on-street parking available near the entrance to Magnolia.



Thorndike and Magnolia Park and Fields

Size: 13.3 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

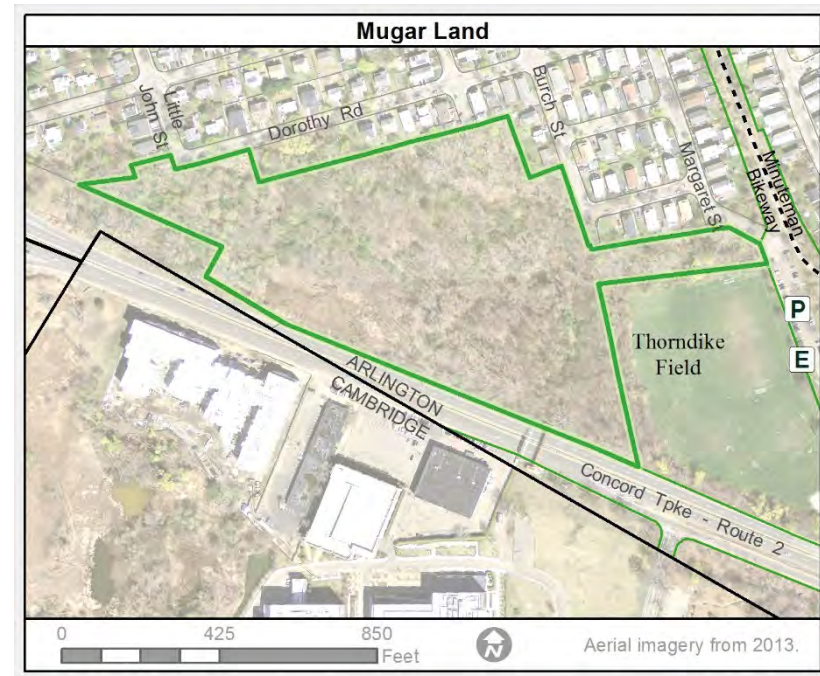
Current Use: Active and passive recreation

Mugar Land

The 17-acre Mugar parcel in East Arlington is the last large privately owned but undeveloped tract of land in the Town. It is adjacent to residential neighborhoods and heavily used Thorndike Field, and is bordered in part by Route 2. It is also adjacent to the Alewife Reservation, a mixed conservation and developed area in parts of North Cambridge, Belmont, and Arlington.

The Mugar property has been extensively altered and filled over many decades, but still has significant wetlands and is highly susceptible to flooding. It has been the subject of repeated yet unsuccessful development proposals for more than 50 years. Serious limitations to its development include the lack of legal access from Route 2 and the history of flooding problems. Current FEMA maps indicate that much of the parcel is considered floodplain and is not buildable.

The Town periodically hears that the Mugar family is proposing to seek permits to develop the property, but no such permits or plans have been confirmed. In response, concerned citizens and the Arlington Land Trust have explored various ways to acquire the property in order to preserve it as undeveloped open space accessible to all Town residents. Town Meeting has voted to acquire the property as open space, but to date no significant progress has been made to either protect the land as public open space or to develop it. It remains undeveloped wetlands that is becoming even more important for flood control as extensive development continues on the Cambridge side of Route 2 and another large housing project is pending in the nearby Belmont Uplands.



Size: 16.8 acres

Managing Agency/Owner: Private

Current Use: Undeveloped

Spy Pond, Spy Pond Park and Fields, Elizabeth Island, and Kelwyn Manor Park

At 100 acres, Spy Pond is the largest body of water located entirely within Arlington. Spy Pond is near the Town Center, adjacent to Route 2, and close to the Alewife Reservation. Spy Pond is a "Great Pond," meaning it is a naturally occurring body of water 10 acres or greater in size. The pond was formed by a gigantic block of ice that broke away from the glacier leaving a "kettle hole" filled with glacial waters. Today, the source of the water in Spy Pond is precipitation and runoff, primarily stormwater drainage from the surrounding densely populated residential areas: no river or brook feeds it.

Historic Spy Pond is a beautiful and precious community resource, although access is limited because much of the shoreline is private property. Walking, boating, bird watching, fishing, and ice skating are popular pastimes, and many people, especially families with young children, enjoy Spy Pond Park and the play area near the Arlington Boys and Girls Club.

The public park includes a playground, public boat ramp, rain garden, walking path, benches, and picnic tables. The playground and landscaped park have been renovated over the past several decades, and ongoing maintenance is provided by DPW and the Friends of Spy Pond Park. In 2010, an infestation of sand wasps in the playground required the replacement of the surfacing materials. In recent years, a high school level crew team has used the pond as its practice location and the Recreation Department offers canoe and kayak rentals to the general public on weekends throughout the summer. The Town's Vision 2020 Spy Pond Committee and the Friends of Spy Pond Park are actively involved in stewardship and planning for pond and park improvements, including weed control treatments.

The major renovation of Spy Pond Park, undertaken to prevent soil erosion, improve drainage, remove invasive plant species, and deter geese, was completed in 2005, but continued monitoring and maintenance are required, as well as additional funding.





Enjoying Spy Pond in winter. Credit: Peter Belknap

The work included reconstruction and stabilization of the pond edge with native plantings to control erosion and deter geese; improved pond access points lined with boulders to prevent erosion; installation of a stepped stoned embankment at Linwood Circle; regrading and improved drainage; installation of a new pervious stabilized aggregate path with cobblestone edging from Pond Lane to Linwood Street; some removal of invasive plant species and pruning of existing trees and shrubs; construction of a boat ramp for emergency vehicle access and small private boats; installation of new trees, benches, picnic tables, trash receptacles, interpretive signs and ground cover; and restoration of the existing lawn area at Pond Lane.

The recreational facilities at Spy Pond Field (a.k.a. Hornblower Field), located on Pond Lane opposite the Arlington Boys and Girls Club, include tennis courts that are slated for renovation in 2015, a baseball diamond used by the Arlington High School varsity baseball team and an open multi-purpose field used for high school and youth soccer.

Elizabeth Island, an undeveloped, heavily vegetated island in the middle of Spy Pond, was purchased by the Arlington Land Trust (ALT) in 2010 from a private owner who had announced that it would be put up for sale. The

island is now permanently protected and open to the public under a conservation restriction held jointly by the Arlington Conservation Commission and Mass Audubon. ALT is managing the island for passive recreation, with simple wooded trails and landing areas for small boats. It provides a nesting habitat for various species of duck, Canada Geese, Mute Swan, and other birds and wildlife. Several properly trained and licensed volunteers search for nests each spring and treat the goose eggs to keep the population under control.

Kelwyn Manor Park along the eastern shore of Spy Pond was set aside by the private Kelwyn Manor Association when the former farmland was developed for housing in the late 1930s and early 1940s. The park contains a small beach area, a playground that was refurbished with new equipment in the early 2000s, a half basketball court, and a Little-League-sized baseball diamond. A small thicket of aspen, maples, sumacs, and shrubs stands beside the beach; between it and the water a large area of phragmites has been nearly eliminated and replaced with native vegetation as part of a recent campaign to manage invasive plants. The Kelwyn Manor Association continues to maintain the park with annual cleanups and mowing, and uses it for occasional neighborhood events.

Spy Pond Park and Fields

Size: 100 acres (pond) and 15 acres (park and fields)

Managing Agency/Owner: Department of Public Works/Park and Recreation Commission/Town of Arlington

Current Use: Recreation/Conservation

Elizabeth Island

Size: 2 acres

Managing Agency/Owner: Arlington Land Trust

Current Use: Conservation

Kelwyn Manor Park

Size: 1.8 acres

Managing Agency/Owner: Kelwyn Manor Association

Current Use: Recreation

Civic Bloc

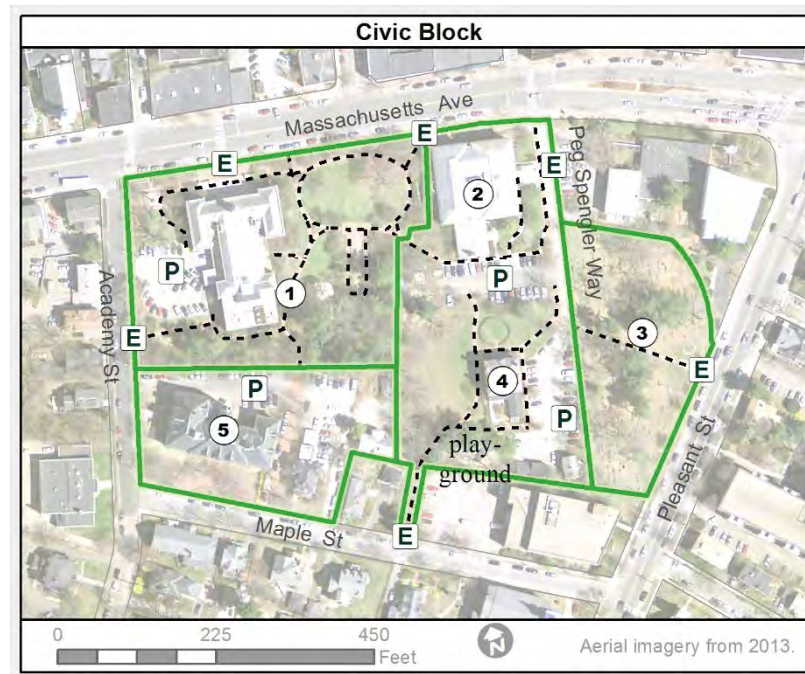
Located on Massachusetts Avenue in the heart of Arlington Center, the Civic Block contains three of Arlington's most iconic civic institutions: Robbins Memorial Town Hall (1), the Robbins Library (2), and the Whittemore-Robbins House (4). They are interconnected by the landscaped grounds and brick walkways of the Winfield Robbins Memorial Garden. The Civic Block represents the generosity of the Robbins family, who donated funds for construction of these impressive landmarks. This historic block also includes the Old Burying Ground (3) and the Central School/Senior Center (5). All buildings within the Civic Block are well-preserved and are designated within the Arlington Center National Register Historic District.

The Winfield Robbins Memorial Garden (1913) was laid out as part of the Town Hall construction project. The original garden design included the Cyrus Dallin sculpture known as "The Menotomy Indian Hunter." In 1939, the Olmsted Brothers reconfigured the garden in a more natural design with a rubble rock base for the Dallin sculpture, with flowering trees and bushes, winding brick paths, a circular fountain and a pool, and a masonry garden wall surrounding the grounds. The Town has prepared a preservation master plan for the garden and repairs to the garden's sandstone and limestone wall were completed in 2013. Volunteers have undertaken some restoration work to the landscape. The garden is protected by a preservation restriction and is used for both community and private events.

Size: 2.7 acres

Managing Agency/Owner: Town of Arlington

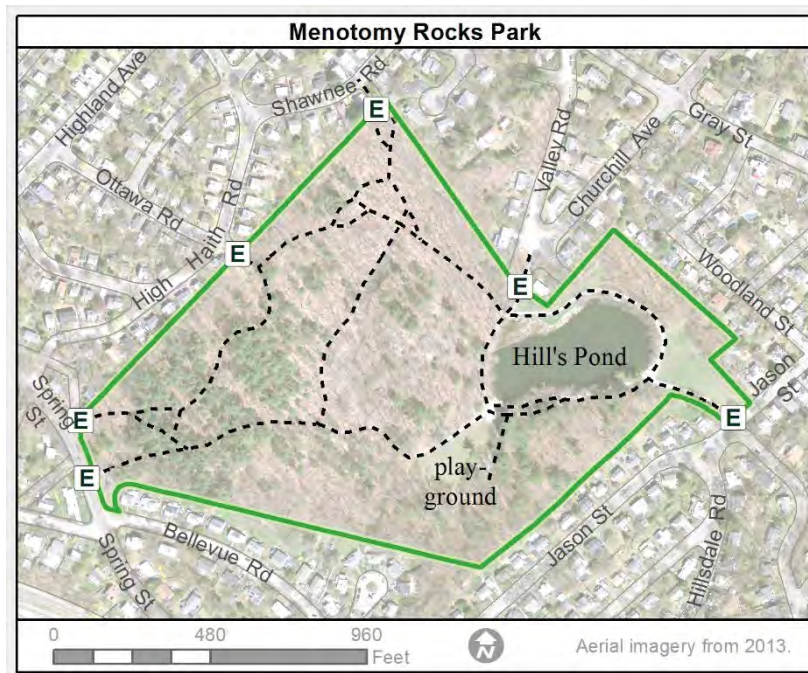
Current Use: Passive recreation/Historic preservation



Winfield Robbins Memorial Garden. Credit: Ann LeRoyer

Menotomy Rocks Park

This historic Town park, established in 1896, was also known as the “Devil’s Den” to the people of Arlington. The park is a blend of manmade areas (Hill’s Pond, fields and playground) and natural features (wooded and rocky sections). After a major dredging of the three-acre pond in 1993, the Friends of Menotomy Rocks Park (FoMRP) was formed to assist the Town with ongoing stewardship of the park. Working with the Town, the Friends group has enabled a number of improvement projects over the years, including rebuilding the playground in the woods, replacing picnic tables, facilitating a memorial bench program, monitoring the health of Hill’s Pond, rebuilding the pond retaining wall, resurfacing the paths with permeable material to facilitate drainage and installing a pond aeration system. The Friends also helped secure funds to rebuild a crumbling pond wall originally built in the 1930s and to eradicate the invasive weeds that appeared after the dredging.



Hill's Pond in Menotomy Rocks Park. Credit: David Bean

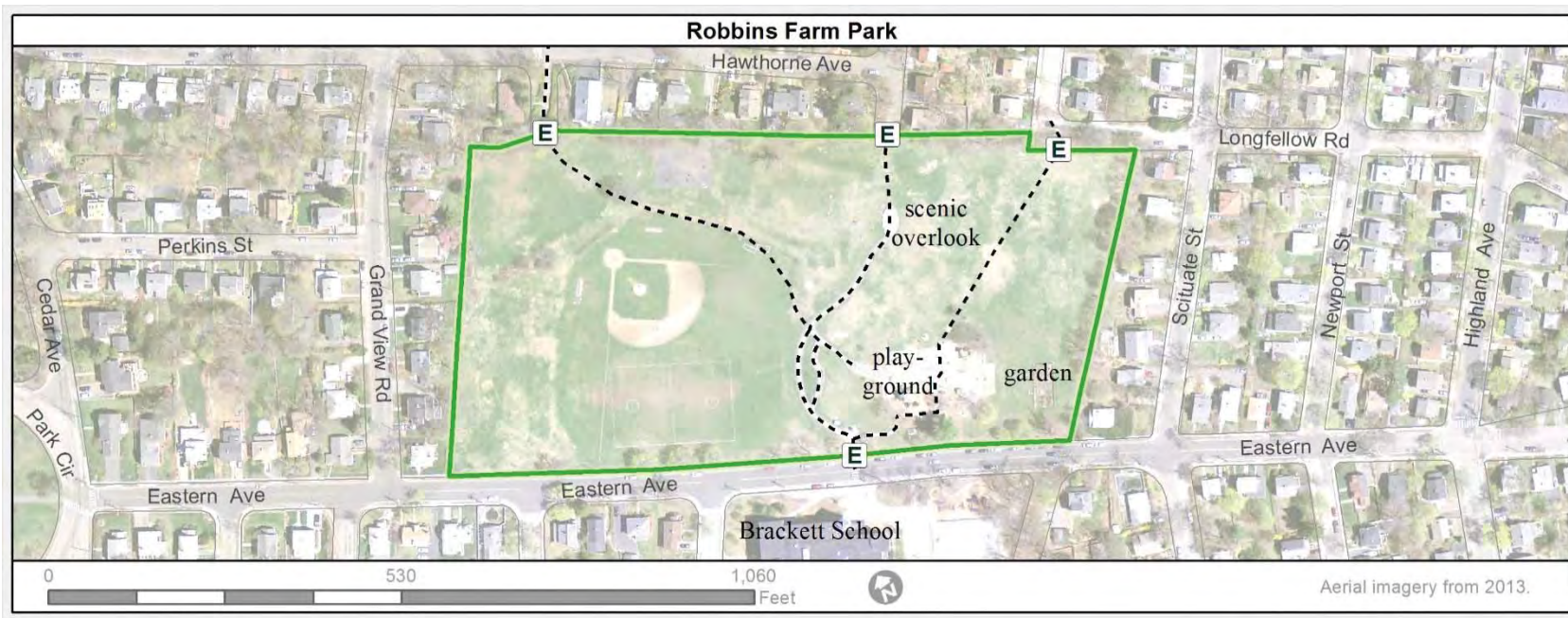
In 2007 the Town funded a capital improvement project for the property, and the park underwent an extensive renovation to its pathway system in an attempt to help control erosion and pond sedimentation. Included in the project were improved controlled access points to the pond, pond aerators, improved drainage and a renovated rear field.

The park is used daily for walking, jogging, picnicking, and dog walking, and seasonally for ice skating and fishing. Special activities include the annual "Spooky Walk" at Halloween; Shakespeare in the Park in conjunction with Arlington Center for the Arts and other Friends groups; and many other educational, sporting, and cultural events. In 2014, Menotomy Rocks Park hosted “Art Rocks Menotomy!,” a juried art installation sponsored by the Arlington Park and Recreation Commission, Arlington Public Art, and the Arlington Center for the Arts.

Size: 35.1 acres

Managing Agency/Owner: Park and Recreation Commission /Town of Arlington

Current Use: Recreation/Conservation



Robbins Farm Par

From 1880 to 1941, at least three generations of the Robbins family farmed this land in Arlington Heights, and historical records cite a Robbins family farming the site during the Revolutionary War. In December 1941, Town Meeting voted to acquire the land for a public park by eminent domain, at a price of \$33,800.

With its spectacular view of the Boston skyline to attract them, residents use the Robbins Farm fields, court, and playground year-round for a wide variety of active and passive recreational activities. Many special events, like the 4th of July celebration and a variety of concerts, are held at the park and sponsored by the active Friends of Robbins Farm Park (FoRFP).

The Park and Recreation Commission, working with the Friends, had a master plan created for the site with students from the Radcliffe Seminar program in landscape design in 1999-2000. A final master plan and cost estimates for the entire site were prepared and a landscape architecture firm was commissioned. The first phase of the project in 2003 included renovation of the hillside slides, new paths and playground equipment, picnic area, additional trees, and the creation of a vista overlook area where the crumbling tennis courts stood. In future phases of the overall project, renovations to the baseball and soccer fields and historic amenities will be considered.

In recent years, maintaining the unique and very popular hillside slides has presented a continuing challenge. With the combined effort of the Town and FoRFP, they were again rebuilt in 2012. A co-operative educational garden has also been launched by a core group of dedicated

gardeners with garden privileges available to the general community through the Recreation Department. The ForFP are also exploring the possibility of having a replica made and installed of the statue of a dog that was favored by children of the community during the property's farming days.

Size: 11.1 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Passive and active recreation



Sledding at Robbins Farm Park with a view of Boston. Credit: Roly Chaput

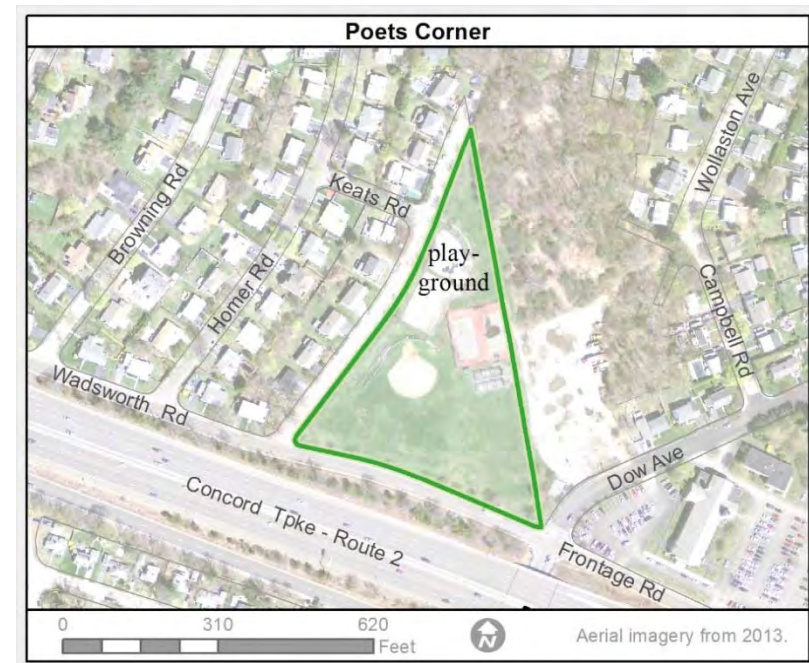
Poets Corner

Poets Corner Park is located in the southwest area of Arlington, off the Route 2 service road at Dow Avenue. The park has a playground, softball/little league field, a multi-purpose grassy outfield, basketball courts, and an area of wetlands. Tennis courts are in a deteriorated state and are no longer used. The youth baseball organization erects two batting cages seasonally that are available for use by the public when not in use by the baseball organization. Parking is available on adjacent streets. Though many uses occur in the lot that abuts the park, this land belongs to the Roman Catholic Archdiocese of Boston.

Size: 3.8 acres

Managing Agency/Owner: Park and Recreation Commission/Town of Arlington

Current Use: Recreation



C. Open Space Inventory Tables

Several tables detail Arlington's publicly and privately owned open space and recreation parcels of significant value. These tables were initially prepared by the Department of Planning and Community Development and have been updated for this 2015 report. Table 5-1 lists the zoning districts in which inventoried open spaces are located. It is not an inclusive list of all zoning districts in Arlington.

Table 5-1 List of Zoning Classes, Codes, and Brief Description:

Full Name	Class	Code	Description
Residence 0	Residence	R0	Large lot, single-family residential
Residence 1	Residence	R1	Single-family residential
Residence 2	Residence	R2	Two-family residential
Business 3	Business	B3	Major business district
Business 5	Business	B5	Central business district
Mixed Use	Mixed Use	MU	Mixed- use district (per special permit)
Planned Unit Development	Planned Unit Development	PUD	Large-scale, multi-use development district
Industrial	Industrial	I	Industry, manufacturing, assembly, etc.
Open Space	Open Space	OS	Undeveloped and recreation land

Table 5-2 (a and b) is an inventory of most public and private open spaces in the Town. The column headings are described here briefly:

Property: Names the open space site

Now Zoned: Indicates how the site is currently zoned by the Town

Acres: Details the site's acreage

Location: Names the major street(s) nearest the parcel

Manager/Owner: Names the agency (or agencies) charged with managing the property and the owner of the property

Current Use/Recreation Potential: Lists the most common or major uses of the site; most public spaces are currently used for recreation. Those noted as conservation have little recreation potential. Private open spaces listed as recreation are the only ones accessible for such use.

Condition: A general description of the maintenance/usability of the site

ADA Self-Evaluation: Conservation Commission and Park and Recreation Department review properties within their jurisdictions, for accessibility and services for disabled; reports are on record with the organization having jurisdiction; noted in the table is the year of evaluation.

Reasonable Accommodation: Based on the ADA Self-Evaluation, notes in what manner the site is accessible for the disabled.

Protection: The type, if any, of grants received for purchase or improvement of site, as well as Art. 97 protection.

Structures: Identifies buildings and other structures on the site.

Comments/Proposed Renovations: Includes additional information about the site, such as any changes in status currently underway and proposed capital improvements, the names of active volunteer citizens groups, and further clarifying descriptions.

Table 5-2a. Inventory of Open Space in Arlington, publicly held property (updated Fall 2014)

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Alewife Brook and Mystic River Reservation	OS	32.1	Alewife Brook and Mystic Valley Parkways	Dept. of Conservation and Recreation (DCR) / Comm. Of Mass.	Passive Recreation / Conservation	Fair			Art. 97		Forms part of eastern and northern borders of town; DCR Alewife Reservation and Mystic River Master Plans in place
Arlington High School	R1	20.8	Mass. Ave.	School Dept.	Education/ Recreation	Good	Peirce Field, 2014	parking, site access		School buildings, service shed, bleachers, press box, concession stand, scoreboard	
Arlington Reservoir	OS	21.3 in Arlington (65 total; 44.7 in Lexington)	Lowell St.	Park and Rec. Comm./ Dept. Public Works/ Town of Arlington	Conservation/ Flood Control/ Recreation (year-round use of trail; seasonal use of swimming area)	Good - sanded beach, parking area, walking trail	Reservoir Beach, 2014	accessible tot lot; learn to swim programs; parking; site access; path of travel; entrance, stairs, doors, restrooms	Land and Water	Maintenance building, Snack bar, Restrooms	Vision 2020 Reservoir Committee; Aquatic weed harvesting done almost annually

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Arlington's Great Meadows	RM, RO, WPD	183.3	Mass. Ave. and Maple St. in Lexington	Board of Selectmen/ Dept. Public Works/ Town of Arlington	Conservation/ Passive Recreation	Good – undeveloped, natural open space			Urban Self-Help; Art. 97		Protected wetlands per Town of Lexington Zoning Bylaws; Friends of Arlington's Great Meadows
Bishop School Playground / Field	R1 / OS	5.7	Stowecroft Rd.	Park and Rec. Comm. / Town of Arlington	Recreation / Education	Good	2014	parking, site access, paths of travel	Land and Water	School	
Brackett School	R1	3.1	Eastern Ave.	School Dept./ Town of Arlington	Recreation / Education	Good				School	
Buzzell Fields	OS	3.6	Summer St.	Park and Rec. Comm. / Town of Arlington	Recreation	Good	2014	drop-off, site access	CDBG; Land and Water; Art. 97		
Cooke's Hollow	OS	0.75	Mystic St.	Conservation Comm./ Town of Arlington	Passive Recreation	Fair-small natural open area, steep slopes	1995		Art. 97		

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Crosby School and Playground	R1	3.8	Oxford St.	Park and Rec. Comm./ ARB/ Town of Arlington	Recreation / Education	Good	2014	parking, site access, path	Land and Water	School (privately owned); Tennis Courts	
Crusher Lot and Ottoson Field	R1/OS	6	Gray St.	Park and Rec. Comm., School Dept. / Town of Arlington	Education/ Conservation	Fair	2014	parking, site access, paths of travel	Crusher Lot-Art. 97	Ottoson Middle School	
Cutter School / Reinhart Playground	OS	0.5	School and Robbins Sts.	Park and Rec. Comm./ Town of Arlington	Recreation	Good	2014	tot lot; parking, site access, path of travel	Art. 97		Adjoining condominiums in former school
Dallin School Playground / Florence Field	R1/OS	5.3	Florence Ave.	Park and Rec. Comm./ School Dept./ Town of Arlington	Recreation / Education	Good	2014	parking, site access, paths of travel	CDBG for Tot Lot; Land and Water	School	
Ed Burns Arena	R1	2.4	Summer St.	Park and Rec. Comm / Town of Arlington/ DCR/ Comm. of Mass.	Recreation / Parking	Poor	2014	parking, ramps, site access, path of travel, stairs	Art. 97	Indoor skating rink (owned by state)	Adjacent to Summer Street Sports Complex

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Forest St. Conservation	OS	1	Forest St.	Conservation Comm / Town of Arlington	Conservation	Good – undeveloped open space	Evaluated 1995	very limited access	Art. 97		
Gibbs Jr. High School	R1	2.7	Foster and Tufts Sts.	ARB / Park and Rec. Comm./ Town of Arlington	Recreation	Good	Fall, 2002	tot lots, parking, site access, path of travel; entrances, stairs, doors, restroom, floors, fountains, switches		School (leased); Arlington Center for the Arts, Kelliher Center, Lesley-Ellis School	Arts, education, and recreational uses
Hardy School	R1	2.5	Lake St.	School Dept./ Town of Arlington	Recreation / Education	Good			CDBG	School	
Hibbert St. Playground	OS	0.5	Hibbert St.	Park and Rec. Comm./ Town of Arlington	Recreation	Fair	2014	parking, site access, path of travel	Land and Water Conservation Fund; Art. 97; CDBG		Renovations in 2014-2015
Hurd / Reservoir Fields	OS	6.1	Lowell St.	Park and Rec. Comm./ Town of Arlington	Recreation / Conservation	Fair	2014	pervious parking, site access, paths	Art. 97		Bordering Mill Brook and Arlington Reservoir

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Jefferson Cutter House and Whittemore Park	B3	0.3	Whittemore Park, Mass. Ave.	ARB/Town of Arlington	Recreation / Cultural/ Historic	Excellent			CDBG; Art. 97	Jefferson Cutter House (historic protection)	Dallin Museum; Chamber of Commerce office
Locke School Playground	OS	0.2	Davis Rd.	Park and Rec. Comm / Town of Arlington	Recreation	Excellent	2014	parking, site access	CDBG		Adjoining condominiums in former school
Magnolia Park and Field	OS	3.3	Magnolia St.	Park and Recreation Comm./ Town of Arlington	Recreation	Good	2014	parking and ramps	CDBG; Land and Water; Art. 97		Community gardens, basketball court
Mass. DPW site (Route 2)	R1	1.1	Sylvia St.	DPW/ Comm. of Mass.	Infrastructure	Good				Maintenance Bldg.	
McClennen Park	OS	20.3	Summer St.	Park and Recreation Comm. / Town of Arlington	Recreation / Conservation/ Flood Control	Good	2014		Art. 97	Skateboard Park	
Meadowbrook Park	OS	3.3	Mystic St.	Conservation Comm./ Town of Arlington	Conservation	Fair-Good natural open space	1995	no accessibility	CDBG; Art. 97		Adjacent to Mt. Pleasant Cemetery
Medford Boat Club	R0	1	Robinhood Rd.	DCR /Comm. of Mass.	Recreation	Good			Art. 97	Boathouse (private)	

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Menotomy Rocks Park	OS	35.1	Jason St.	Park and Rec. Comm./ Town of Arlington	Recreation / Conservation	Good	2014		Land and Water; Hill's Pond-Clean Lakes and Ponds; CDBG; Art. 97		
Minute-man Bikeway	OS	30.1		Towns of Arlington, Lexington, Bedford/ MBTA	Recreation / Transportation	Good			Self-Help; Urban Self-Help; Land and Water		Former Bedford Branch RR; runs full length of the town from Cambridge to Lexington; Arlington section resurfaced 2002; Arlington Bicycle Advisory Committee
Monument Park	R1	0.4	Mass. Ave./ Broadway	Town of Arlington	Historic	Good				Monument	Adjoining Central Fire Station
Mt. Gilboa	OS	10.7	Crescent Hill Ave.	Conservation Comm / Town of Arlington	Conservation/ Passive Recreation	Good			Land and Water; Art. 97; Historic District	Single-family house (rented)	
Mt. Pleasant Cemetery	R1	58.9	Medford St.	Cemetery Comm./ DPW/ Town of Arlington	Cemetery	Good				Maintenance buildings, Chapel	Limited burial space remaining; columbarium and green burial areas planned

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
MWRA Pump Station	I	4.1	Brattle St.	MWRA/ Comm. of Mass.	Infrastruc- ture	Good				Station	
North Union Park/ Lussiano Field	R1/OS	5	North Union St.	Park and Rec. Comm./ Town of Arlington	Recreation	Good	2014	drop-off, site access, paths of travel	CDBG; Land and Water; Art. 97 - North Union Playground	Thompson School (rebuilt in 2012-2013)	Playground, spray park renovations, 2014
Parallel Park	OS	1.2	Medford St.	Park and Rec. Comm./ Town of Arlington	Recreation	Good	2014	drop-off and site access	CDBG; Land and Water; Art. 97		
Park Circle Water Tower	R1	1.8	Park Circle	Park and Rec. Comm./ Town of Arlington	Recreation	Good		site access and path of travel		Water Tower	
Parmenter School	R1	1.2	Irving St.	Park and Rec. Comm. / ARB/ Town of Arlington	Recreation / Education	Good	2014	parking, site access, path of travel		School (leased)	
Peirce School	R1	2.3	Park Ave. Ext.	School Dept. / Park and Rec Comm/ Town of Arlington	Recreation / Education	Good	2014			School	

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Poets Corner	OS	3.8	Wollaston Ave.	Park and Rec. Comm./ Town of Arlington	Recreation	Fair	2014	parking, site access, paths of travel	CDBG; Land and Water; Art. 97	Tennis Courts (unusable)	
Ridge St. Conservation	OS	0.6	Ridge St.	Conservation Comm./ Town of Arlington	Conservation	Good – undeveloped open space	1995	limited access	Art. 97		
Robbins Farm Park	OS	11.1	Eastern Ave.	Park and Rec. Comm./ Town of Arlington	Recreation	Good-Excellent	2014	parking, site access	Land and Water; Art. 97		Friends of Robbins Farm Park; Cooperative community garden
Spy Pond Park, Spy Pond and Scannell Fields	OS	15.0; Spy Pond water surface (100)	Pond Lane, Wellington St., Linwood St.	Park and Rec. Comm./ Dept. Public Works/ Town of Arlington	Recreation / Conservation	Park - excellent; Playing fields - good; Play ground - good	2014	parking, site access, slopes, paths	CDBG; Land and Water; DEM Lakes and Ponds Restoration ; Art. 97	Tennis Courts; seat walls; playground equipment; bleachers at Spy Pond (Hornblower) Field and Scannell (Santini) Field	Friends of Spy Pond Park; Vision 2020 Spy Pond Committee; Tennis court renovations in 2015
Stratton School / Greeley Playground / Pheasant Ave. Field	R1/OS	4.1	Pheasant Ave.	Park and Rec. Comm./ School Dept./ Town of Arlington	Recreation / Education	Fair	2014	parking, site access, path of travel	Land and Water; Greeley Field-Art. 97	School	Friends of Greeley Park at Stratton

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Summer Street Sports Complex	OS	12.7 (playing fields)	Summer St.	Park and Rec. Comm./ Town of Arlington/ DCR/Comm of Mass (building)	Active and passive Recreation	Good - fields Poor - rink	Hill's Hill, Buck Field, Summer St. Park, 2014	parking, slopes, ramps, site access	Land and Water; Art. 97	Indoor skating rink (owned by state)	
Thorndike Field	OS	10	Thorndike St.	Park and Rec. Comm./ Town of Arlington	Recreation	Good	2014	parking, ramps, site access	Art. 97		Off-leash Recreation Area
Thorndike St. Wetlands	OS	1.7	Thorndike St.	DCR/ Comm. of Mass.	Conservation /natural open space	Fair			Art. 97		
Town Hall Civic Block	R1	2.7	Mass. Ave./ Academy St.	Town of Arlington	Recreation / Cultural/ Historical	Good			Mass. Preservation Projects Fund	Town Hall, Central School, Whittemore-Robbins House, Memorial Gardens, Robbins Library, Old Burying Ground	Friends of Winfield Robbins Memorial Garden
Turkey Hill	OS	10.7	Brand St.	Park and Rec. and Conservation Comm./ MWRA	Recreation / Conservation	Fair		semi-primitive trails; site access	Art. 97	Water Tower-MWRA	Turkey Hill Land Stewards

Property (Public)	Now Zoned	Acres	Location	Manager/ Owner	Current Use/ Recreation Potential	Condition	ADA Self-Evaluation	Reasonable Accom.	Protection (Grant, Art. 97, restriction, easement)	Structures	Comments/ Proposed Renovations
Uncle Sam Park & Monument	B5	0.2	Mass. Ave./ Mystic St.	Board of Selectmen/ Town of Arlington	Historic	Good				Monument	
U-Shaped Parcel, Brattle Street	OS	0.54	Brattle St.	Conservation Comm./ Town of Arlington	Conservation	Good – undeveloped open space	Evaluated 1995	very limited access	Art. 97		
Waldo Park / Playground	OS	1	Teel St.	Park and Rec. Comm./ Town of Arlington	Recreation	Excellent	2014	drop-off and site access	CDBG; Land and Water; Art. 97		Renovations completed in 2006; Friends of Waldo Park
Wellington Park	OS	3	Grove St.	Park and Rec. Comm./ Town of Arlington	Recreation	Fair	2014	site access, path of travel	Land and Water Conservation Fund; CDBG; Art. 97; Carol White PEP grant	Tennis Courts (lighted). Project Adventure challenge course	New playground planned, 2015-2016
Window on the Mystic	OS	3	Mystic St.	Conservation Comm / Town of Arlington	Conservation	Good - natural open space	1995	very limited access, steep steps	CDBG; Self-Help; Art. 97		
Woodside Lane Conservation	OS	0.6	Woodside Lane	Conservation Comm / Town of Arlington	Conservation	Good – undeveloped woods	1995	very limited access	Art. 97		
Total Public A		513.49									

Table 5-2b. Inventory of Open Space in Arlington, privately held property (updated Fall 2014)

Property (private)	Now Zoned	Acres	Location	Manager/ Owner	Current Use	Condition	ADA Self Eval.	Reasonable Accommodation	Structures	Comments
Arlington 360 LLC and BrightView Assisted Living	MU	8.7 (open space accessible to the public under CR) Approx. 18 total	Symmes Rd.	Arlington 360 LLC	Residential/ Assisted Living/ Conservation	N/A			Residential development and assisted living facility	Conservation restriction held by Arlington Land Trust and Arlington Conservation Commission
Arlington Catholic High School Field	R1	2.3	Summer St.	Roman Catholic Archdiocese of Boston	Recreation	N/A				
Armenian Cultural Institute	RO	1.9	441 Mystic St.	Armenian Cultural Institute	Private/ Cultural	N/A			Meeting Center	
Belmont Country Club	R1	11.2	Kent Lane off Brewster Rd.	Belmont Country Club, Inc.	Recreation	N/A				
Boston Gas Co.	R1	2.3	307 Washington St.	Boston Gas Co.	Private Utility	N/A				
Elizabeth Island	R1	2	Spy Pond	Arlington Land Trust	Conservation	N/A		Accessible by small boats		Conservation Restriction held by Mass Audubon and Arlington Conservation Commission
Jason Russell House	R2	0.6	Mass. Ave./ Jason St.	Arlington Historical Society	Historical	N/A			House and Museum	Located in Jason-Gray Historic District

Property (private)	Now Zoned	Acres	Location	Manager/ Owner	Current Use	Condition	ADA Self Eval.	Reasonable Accommodation	Structures	Comments
Kelwyn Manor Park	R1	1.8	Spy Pond Pkwy.	Kelwyn Manor Association	Recreation	N/A			Playground	
Mugar Land	PUD	17.4	Concord Turnpike (Route 2)	Y & M Trust	Private-Undeveloped	N/A				
Poets Corner	R1	6.5	Wollaston Ave. and Kipling Road	Roman Catholic Archdiocese of Boston	Parking/ Wetland area	N/A				
Prince Hall Cemetery	R1	0.2	Gardner St.	Masonic Grand Lodge, Corp.	Cemetery/ Historical	N/A				
St. Paul's Cemetery	R1	14.9	Broadway at Route 16	Roman Catholic Archdiocese of Boston	Cemetery	N/A			Chapel, Maintenance	
Winchester Country Club	R0	48	468 Mystic St.	Winchester Country Club	Recreation	N/A			Clubhouse, Maintenance	
Total Private Acres		117.8*								

**This total counts only 8.7 acres of the Arlington 360 property.*

6

Community Goals

A. Description of Process

Arlington's open space and recreational goals for the community are derived from the open space and recreational needs and desires of the Town's many constituencies. For this Plan, the Open Space Committee reviewed all previous goals and actions and prepared an extensive list of accomplishments, incorporating feedback and reports from many individuals and organizations. The progress made by the Town over the past seven years demonstrates and reinforces its commitment to these goals.

The 1996, 2002, and 2007 Plans, as well as this current Plan for 2015-2022 accept and support two overarching community goals (Environment and Culture and Recreation) of Arlington's Vision 2020, which Town Meeting has adopted and which Town decision-making bodies must consider in their policymaking. Furthermore, because Arlington's Vision 2020 has won numerous awards for its community planning and is composed of elected and appointed Town officials and community members, the committee believes Vision 2020 goals continue to represent Arlington's community and its commitment to open space and recreation issues.

These goals are also encompassed in the Town's Master Plan, which was adopted by the Arlington Redevelopment Board in February 2015.

B. Statement of Open Space and Recreation Community Goals

Adopted from Arlington's Vision 2020 and the Town's bylaws, the following two statements now also serve as Arlington's open space and recreation community goals:

1. Environment: We value the physical beauty and natural habitats of our Town—parks, ponds, and wetlands, dramatic vistas and tree-lined streets—as they contribute to the well-being of our community. Recognizing the fragility of our natural resources, we must ensure that Arlington's residential areas, commercial centers and infrastructure are developed in harmony with environmental concerns. We will be known for our commitment to the preservation of Arlington's beauty, limited open space and resources, as well as our place in the regional and global community.

2. Culture and Recreation: We value the many opportunities to meet, play, and grow in Arlington while treasuring and preserving our unique historical resources. Our social, cultural, artistic, historic, athletic, recreational, and other community groups strengthen Town life. We will be known for the breadth and richness of our resources and activities available to Arlington citizens.

The fulfillment of the above community goals will make Arlington a more desirable and pleasant Town to live in and visit. Further, by bringing these community goals to fruition, Arlington's community may acquire a greater sense of awareness of and appreciation for the Town's open space.

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Analysis of Needs

The Open Space Committee generated this Analysis of Needs by reviewing the 2014 survey conducted by Vision 2020, assessing input from a series of public forums held in 2012 through 2014 in association with the Town's Master Plan process (particularly its sections on Open Space, Natural Resources, and Public Facilities), and other research and documentation on Arlington's resource, community, and management needs. This analysis summarizes the major open space issues and concerns facing the Town in 2015 and beyond.

A. Summary of Resource Protection Needs

The Open Space Committee continues to address the following five general areas of concern as outlined in the 2007-2012 Plan:

- Regional resource protection needs
- Historical resource protection needs
- Water bodies resource protection needs
- Fisheries and wildlife protection needs
- Vegetation protection needs

It is understood that these areas of need have broad overlap; however, the OSC presents each specific resource protection need under the area of concern in which it best fits. Many of the issues addressed here are also described in the Arlington Master Plan, which was adopted by the

Arlington Redevelopment Board in February 2015 (available on the Town website or in the Planning Department).

Regional Resource Protection Needs

Successful implementation of a good open space plan for Arlington requires cooperation with nearby communities and resource-oriented organizations in the region. A regional natural resources review would help to protect virtually all of Arlington's natural open spaces. Examination of their total ecological requirements and effects on the health of regional resources must be ongoing.

Recent and proposed developments in the vicinity of Alewife Brook and Reservation in East Arlington exemplify why regional coordination is so important. The impending development of the Belmont Uplands (40B residential development on a former silver maple forest surrounded by wetlands) and the recent construction of several large residential and commercial properties in adjacent Cambridge on the former Arthur D. Little property and on nearby streets have seriously impacted the fragile ecology and flooding problems, as well as traffic congestion and pollution, in that tri-community region near the Alewife T Station and Route 2. The 17-acre Mugar property in Arlington is the last large undeveloped area in the former Great Marsh area, and will need concerted efforts to ensure its protection for both wildlife habitat and flood control.

Additional networking and regional planning are needed to maximize the design, use, and maintenance of regional recreational resources, such as bicycle and pedestrian paths and aquatic and terrestrial wildlife corridors. The Massachusetts Department of Conservation and Recreation (DCR) Master Plan for the Alewife Reservation included construction of the Alewife Brook Greenway trail that links the existing Minuteman Bikeway to the Mystic River Reservation in Medford. Further cooperation among state and local groups will enhance the area with additional pathways and amenities.

The annual spring migrations of the Alewife and Blueback Herring (via the Mystic River and Alewife Brook) that spawn in Little Pond and the Mystic

Lakes have decreased significantly since colonial times. The DCR's restoration of the dam and installation of a fish ladder between the Upper and Lower Mystic Lakes on the Arlington-Medford border has led to a recovery of the fishery since 2012. However, public access to the lakes in Arlington is limited, and further planning is needed to enhance such opportunities.

Many of the historical landscapes in Arlington reveal their full significance only when presented in the context of their relationship to other communities. For example, Mill Brook flows for nearly three miles through Arlington, but it originates in Arlington's Great Meadows in East Lexington. This 183-acre site is owned by the Town of Arlington, but renewed negotiations between the towns are needed to ensure its permanent protection as conservation land.

Historical Resource Protection Needs

Arlington residents have shown a continuing respect and reverence for the Town's historical facilities and spaces. The most prominent area is the Civic Block, which includes the Town Hall, Robbins Library, Whittemore-Robbins House, Winfield Robbins Memorial Garden, and the Old Burying Ground. Recent work has included renovations to the interior of Town Hall, restoration of the Cyrus E. Dallin Flag Pole and sculpture next to Town Hall, restoration of the Dallin "Menotomy Indian Hunter" sculpture, renovation and expansion of the Robbins Library, and renovation of the Whittemore Robbins House. Additional repairs and constant maintenance by the Town in collaboration with local volunteers are needed to ensure that these historic resources are preserved.

The open space around the historic Jason Russell House in Arlington Center derives much of its significance from the regional battle fought there during the Revolutionary War. The Battle Road Scenic Byway links four towns – Arlington, Lexington, Lincoln, and Concord – through which the British regulars passed on April 19, 1775. These towns, with Minute Man National Historical Park, the Massachusetts Department of Transportation, and the Metropolitan Area Planning Council, need to continue their

collaborations to highlight the historic, cultural, recreational, scenic, and natural resources along this route.

In order to protect its historic and cultural resource areas, the Town needs to first identify what resources are present. Over the past three decades, the Arlington Historical Commission (AHC) has documented many of Arlington's historic resources on inventory forms. However, while these forms include extensive historical and architectural narratives, the majority of them and their associated photographs are now more than 15 years old. Furthermore, the Town still has significant locations, resources, and typologies that remain undocumented. Arlington also needs to strengthen its relationship with Massachusetts Historic Commission and Historic Massachusetts, two state agencies that focus on historic sites and properties, and to avail itself of grants and other funding for preservation projects, especially for much-needed work on Town-owned buildings, sculptures, and other structures.

Ideas to redevelop areas within the Mill Brook corridor from the Arlington Reservoir to Meadowbrook Park and the Lower Mystic Lake are currently under active discussion. In the mid-1630s, Captain Cooke's gristmill was built on the brook near Mystic Street at the location that is now Cooke's Hollow conservation land. This was the first water-powered gristmill in the United States. Many other mills and mill ponds were built along the brook during the eighteenth and nineteenth centuries.

The only mill that survives is the Old Schwamb Mill in Arlington Heights, which continues as a museum with demonstrations of the historic manufacture of oval wood frames. Many other buildings of historical and architectural significance exist in the Mill Brook Valley, and some are on the National Historic Register. The enhancement of this corridor would reinvigorate understanding of its heritage and access to this unique natural and historic resource in the middle of town.



Historic Old Schwamb Mill next to Mill Brook in Arlington Heights. Credit: Ann LeRoyer

Water Resource Protection Needs

All of the water bodies in Arlington face the threat of nonpoint pollution within their contributing watersheds due to runoff from roadways, houses, and businesses, accelerating the process of eutrophication. In particular, the following water bodies face specific problems.

Spy Pond receives runoff from Route 2 and the surrounding densely developed area via more than 40 storm drains that bring in excess nutrients and large amounts of road salt and sand. A sandbar which threatens to choke off a corner of the pond has built up from the drain from Route 2. Efforts to get Mass Highway to remove it have so far been unsuccessful and must be continued.

Arlington Reservoir faces nonpoint pollution problems from pesticides and fertilizers from a nearby farm and surrounding homes and roadways. Two storm drains in Lexington discharge directly into the Reservoir. There are several aquatic invasive plants growing in the Reservoir, but the species with the biggest impact is the water chestnut (*Trapa natans*) which forms thick barriers on the water surface. It is partially controlled by manual and mechanical harvesting during the summer. However, Reservoir management is sometimes difficult because the Reservoir is located in both Arlington and Lexington. A collaborative management plan overseen by both towns would allow for more effective monitoring and maintenance of the Reservoir.



Volunteers harvest water chestnuts at Arlington Reservoir. Credit: David White

The Mystic Lakes have suffered from the nonpoint runoff from the Mystic Valley Parkway and lawn and yard maintenance. Aquatic weeds such as milfoil have proven both a hazard to human safety and a contribution to the eutrophication of the water body, which borders Arlington, Medford and Winchester. The Mystic River Watershed Association conducts regular

monitoring and cleanups of invasive plants, but additional efforts are needed.

Mill Brook runs from the northwestern border with Lexington near the Arlington Reservoir through the center of town and into the Lower Mystic Lake. It faces pollution assaults all along its route via nonpoint sources and storm drains. Culverting and physical barriers make Mill Brook, especially upstream of Cooke's Hollow, an untenable habitat for fish and native aquatic mammals. A concerted commitment to revitalize this natural resource and designate a Mill Brook corridor path is needed.

Alewife Brook is one of the most polluted water bodies in Town, with combined sewer overflows that are activated in heavy rains along its banks from Cambridge, Somerville, and the MWRA system. An official Tri-Community committee has been studying this problem for years, and construction is now underway to separate some of these combined drains in Cambridge, although this has not solved the problem.

Hill's Pond, originally created to feed Farmer Hill's cows, is a scenic pond in Menotomy Rocks Park that supports fish and other pond life. The Friends of Menotomy Rocks Park and the Town's DPW work to treat the pond, but additional funding is needed to repair and maintain it properly.

Fisheries and Wildlife Protection Needs

Arlington has breeding, migrating, or wintering populations of invertebrates, fishes, amphibians, reptiles, birds, and mammals that require open space. To sustain these populations in the natural resource areas described earlier, the Town should, among other things, consider the following:

- Effect of commercial or residential development adjacent to open space
- Effect of an increase in active recreational uses in open space
- Effect of new or increased level of pollution in the Town's waters

- Effect of increased grass areas and the spread of invasive plants on the food sources and habitats for wildlife
- Effect of climate change on waterways and other wildlife habitats\

Vegetation Protection Needs

Wetlands perform important environmental functions and are essential habitats for birds and many other creatures. Arlington at present has very few wetlands, since many were filled in as the town was developed. Construction of new buildings and streets has affected the hydrology of all wetland areas, and the vegetation in the remaining wetlands is in need of protection. The expansion of invasive species, notably *Phragmites* in wetland areas and Japanese Knotweed elsewhere, affects other vegetation throughout the watershed, and better controls are needed to manage these problems.

Although use of native trees and other beneficial plants generally has increased, invasive and exotic species continue to spread in both wetlands (e.g., *Phragmites* and *Lythrum Salicaria*) and uplands (e.g., *Polygonum cuspidatum*, *Celastrus orbiculatus*). Some invasive species such as Oriental Bittersweet directly damage existing trees and other plants, while other invasives just displace them. As mentioned above, most invasive plants reduce the food available for wildlife. Environmentally safe and appropriate control efforts are needed on a Town-wide basis.

Although the Environmental Design Review zoning bylaw of Arlington includes requirements for landscaping of new commercial developments (discussed in chapter 4), no provision exists for protecting wildlife habitat, except through the Wetlands Protection Act. In most commercial, public, and private landscaping projects, vegetation is usually selected on the basis of cost, appearance, and durability; there is less awareness of the effect on birds and other wildlife native to the area.

B. Summary of Community Needs

The Open Space Committee generated the following community needs analysis from:

- Park and Recreation Commission (PRC) reports and capital plans (2010-2014)
- PRC-commissioned ADA Study (2014) prepared by the Institute for Human-Centered Design
- Review of community feedback on the 2014 survey by Vision 2020, several public forums sponsored by the Town as part of the Master Plan process, and through ongoing meetings and reports
- Analysis of accomplishments since publication of the previous 2007-2014 Open Space and Recreation Plan (Section 2)
- Analysis of Sections 3 through 6 of this 2015 Plan

Natural Open Space Needs

Several surveys conducted by the Open Space Committee over recent years and by Vision 2020 in 2014 indicate strong interest in natural open space areas for passive recreation, including walking, bird watching, and quiet contemplation (See Appendix B—Vision 2020, 2014 report). These needs for peaceful public places to walk and relax are currently met at wooded and meadow areas such as Menotomy Rocks Park, Arlington Reservoir, Arlington's Great Meadows in Lexington, Symmes Woods and two new parks at the Arlington360 complex, McClennen Park, Hill's Hill, Turkey Hill, Mt. Gilboa, Spy Pond Park, the Minuteman Bikeway and the Alewife Brook Greenway.

Access to water bodies is especially valued. Trails around Spy Pond are limited to a few unconnected areas, and many residents would like to see a walking trail around the entire pond. The recent acquisition of Elizabeth Island in Spy Pond offers an additional space for conservation and passive recreation, though it is accessible only by small boat. State DCR properties in the Alewife Reservation and the Mystic River Reservation include water

bodies and natural habitats in Arlington, with recently improved access and trails along Alewife Brook and the Mystic River, but limited access to the Mystic Lakes.

Park and Recreation Needs

The same surveys noted above indicate important needs and concerns about active outdoor recreational facilities. According to the Park and Recreation Commission (PRC), many of Arlington's playing fields are designated for multi-sport use. During the busy spring, summer, and fall sports seasons, most of these fields are in constant use by high school teams, organized youth sports leagues, and the public. Sports participation has increased in recent years, which creates further field availability and maintenance problems. For example, Arlington's Soccer Club program serves over 1,800 children. The addition of youth lacrosse has also increased demand for the soccer/utility fields, and the addition of a Little League softball program and summer leagues has increased demand for baseball fields. See Appendix C for the most recent PRC multi-year capital plan.

In 2014, the PRC commissioned an assessment of the accessibility of all its properties, which was conducted by the Institute for Human Centered Design (Appendix E). Much work needs to be done to bring Arlington's parks, playgrounds and playing fields in compliance with ADA requirements. This work will be accomplished through capital renovations and targeted projects.

Arlington's Playing Fields

As a result of Arlington's limited field space and continuing high youth and adult participation in recreational sports, most playing fields are heavily used throughout the year. The Park and Recreation Commission regularly documents the number of Arlington's playing fields and the number of sports teams that play on those fields. A field policy is in place to help ensure equitable access and assist in protection of the Town's limited and valuable field assets.

The Park and Recreation Commission indicates the need for field upgrading and much better and more consistent field maintenance so that fields stay in the proper condition for use, thereby saving the time and money otherwise needed for serious field renovation. Proper maintenance will also provide better compliance with ADA requirements. Continuing to encourage appropriate use and enforcement of Town bylaws is also essential to helping maintain playing fields. The addition of two multi-use fields and one youth baseball field at McClennen Park and the completion of the Arlington High School W.A. Peirce Field complex renovation will allow the PRC to periodically rest some fields and reduce overall wear and tear, as recommended in a plan prepared by the Field Maintenance and User Fee Study Committee in 2005. It is also recommended that the PRC continue to upgrade facilities for swimming, basketball, and children's playgrounds.



McClennen Park now has two multi-use fields Credit: Courtesy of Arlington Open Space Committee

Number of Playing Fields

The Park and Recreation Commission has evaluated the number of playing fields needed and recommends a total of 28 fields. The following

narrations, prepared by the Park and Recreation Commission, explain the status and need for additional playing fields:

Baseball Fields

Arlington has a sufficient number of major league baseball fields. All five major league diamonds are situated in different areas of the Town, and afford maximum formal and informal use. Each field accommodates another sport during the non-baseball season. Three of the baseball fields (North Union, Robbins Farm and W.A. Peirce) are limited to use by younger players because of their short outfields. PRC recommends that one of these shorter fields be expanded to accommodate older players who need a full-size field.

Youth Baseball/Softball

Fifteen fields with 60-foot base paths are scattered throughout Arlington. Softball and youth baseball fields have somewhat different configurations, as youth baseball fields have a pitcher's mound and softball fields do not. While a new youth baseball field was added at McClennen Park and the addition of lights and renovation at Buck Field has increased its available playing time, the PRC continues to recommend adding one field dedicated to softball, which is growing in popularity.

Soccer (100 yards plus) and Soccer (40 X 60 yards)

Of the fourteen soccer fields, five are located in one area (the Magnolia/Thorndike complex in East Arlington) and cannot be used simultaneously. Soccer continues to be the largest youth sport in Arlington. Two multi-use fields have been created at McClennen Park and a multi-sport practice field was added during the renovation of the W.A. Peirce Field complex at Arlington High School. The main playing field at that complex is a multi-sport field that was renovated to state-of-the-art condition with field turf. This surface allows for consistent playability with minimal maintenance. The High School has priority of use of this field; however it is strongly recommended that this community asset continue to be accessible to community soccer, football, lacrosse, and field hockey programs.

Football

The only football field in Arlington is located at Arlington High School (W.A. Peirce Field). Nine teams (including Arlington High School, Arlington Catholic High School, and Pop Warner teams) use this field. A multi-sport practice field at W.A. Peirce Field and a multi-use field with goal posts at McClennen Park have increased the available inventory of football practice fields. Arlington Catholic High School has also renovated its practice playing field on Summer St. with field turf and does allow other community uses of this field, when not in use by the school.



The only football field in Arlington is at the W. A. Peirce Field at Arlington High School. Courtesy of Arlington Open Space Committee

Field Hockey

The Park and Recreation Commission manages one field hockey field, which is located in the outfield of the Summer Street baseball field. Since

the renovation at W.A. Peirce Field, many games have been relocated to that turf field, which should continue to be the case.

Lacrosse

Arlington has witnessed a surge in participation in the sport of lacrosse. Several boys and girls teams have formed at the high school and youth levels. The fields needed for play are shared with soccer, but both sports cannot be played simultaneously on adjoining fields. This continues to place additional scheduling and maintenance demands on the existing fields.

Field Development Solutions

As a built-out community, Arlington has severe restrictions on its ability to acquire land and add to or reallocate playing fields. The PRC continues to renovate existing fields, with an eye toward possible expansion in the Poets Corner area.

Department of Public Works Needs

Arlington's Department of Public Works (DPW) needs work-yard space for collecting, storing, and distributing certain kinds of materials, such as tree parts and other organic refuse collected after major storms, and for seasonal snow storage. Former sites next to Meadowbrook Park in Mt. Pleasant Cemetery and at the Arlington Reservoir are no longer available. Over the past few years, excess vegetation and snow has been placed temporarily on the parking lot next to the Arlington Reservoir, but that is not a practical solution for the long term. Out of town locations probably need to be found since there are no other large spaces in Arlington that would be appropriate for such uses.

SCORP

In 2012, the Executive Office of Energy and Environmental Affairs completed the Massachusetts' Statewide Comprehensive Outdoor Recreation Plan (SCORP) to help guide the distribution of federal funding from the Land and Water Conservation Fund (LWCF) to state agencies and

municipalities for the acquisition of open space, renovation of parks, and development of new parks. The SCORP is a planning document that discusses the available recreational resources in a state, as well as its needs, and identifies the gaps between the two.

Goals and action steps were developed after distilling all of the information gathered through the public participation process. These four goals include:

1. Increase the availability of all types of trails for recreation.
2. Increase the availability of water-based recreation.
3. Invest in recreation and conservation areas that are close to home for short visits.
4. Invest in racially, economically, and age diverse neighborhoods given their projected increase in participation in outdoor recreation.

These goals will meet the needs of Massachusetts residents, but also the goals of America's Great Outdoors (AGO) for investments in urban parks and community green spaces. Multiple SCORP goals also coalesce with the Commonwealth's desire to increase the share of bicycling and walking among Massachusetts transportation choices.

The SCORP goals are consistent with the goals and objectives of Arlington's OSRP. For example, the Plan has defined several major corridors (Minuteman Bikeway, Mill Brook, and the Alewife Brook Greenway) from which connections to various parks and other open space resources will be enhanced. Additionally, the Town is working with adjacent communities, such as Lexington's ACROSS Lexington program and bike trails in Cambridge, Somerville, and Belmont that emanate from the Minuteman Bikeway to build better regional trail networks and connections within and outside the Town's boundaries.

The Town has invested in outdoor water-based recreation in areas including Spy Pond and the Reservoir. The Town's open space and



Alewife Brook Greenway on DCR land in East Arlington. Credit: Ann LeRoyer

recreation facilities are well-distributed around the community so that they are relatively convenient to most residents. Finally, the Town has a robust and diverse recreation program that serves all its residents, as well as private programs through organizations such as the Arlington Boys and Girls Club (Massachusetts Executive Office of Energy and Environmental Affairs 2012).

C. Management Needs, Potential Change of Use

The primary management needs Arlington faces today relate to how the Town maintains its existing open spaces and recreational facilities. In particular, the Town needs to:

- Increase funding and staffing for management, maintenance, and upgrading of open spaces and outdoor recreational facilities;
- Formalize implementation of the playing field rotation and maintenance recommendations documented in 2005 by the Field User Maintenance and Fee Study Committee and create sustainable DPW playing field maintenance schedules; and
- Empower the Open Space Committee to work more closely with Town departments and committees to facilitate, help implement, update, and advance the goals of this Open Space and Recreation Plan.

Town Open Space Management

Most communities in Massachusetts have struggled with inadequate revenues to maintain current levels of service since the passage of Proposition 2½, a statewide referendum voted more than 35 years ago that limits the amount of revenue a community can collect through the property tax. Arlington is no exception. All public services suffer as communities prioritize their allocation of revenues. Parks, playgrounds, and other open spaces must compete with other local needs as maintenance dollars are cut and personnel are reduced.

Until 1992-1993 park and recreation facilities were the responsibility of the Town's Department of Properties and Natural Resources, which was headed by one of seven department heads reporting to the Town Manager. Normal attrition, a hiring freeze, an early retirement program, and a reorganization of management structure resulted in a consolidation of Public Works, Properties and Natural Resources, and Engineering into one Department of Public Works with several divisions. This consolidation

marked an important change in the way the Town managed its open spaces and recreation facilities.

While this new arrangement may have increased efficiency, it fails to recognize the importance of public properties and open spaces as a separate management entity. The Town does not have one professional staff member whose sole duty is to oversee the maintenance of open spaces and recreational facilities; rather this responsibility is shared among three departments: Recreation (recreational programming and limited facilities management for the Ed Burns Arena, Gibbs Gym, and Reservoir Beach); Public Works (maintenance); and Town Manager (management). Furthermore, the Town's public open spaces are overseen by many different boards and commissions with differing and sometimes conflicting missions (including Park and Recreation Commission, Conservation Commission, Board of Selectmen, School Committee, Finance Committee, Capital Planning Committee), as well as many independent Friends groups, sports organizations, and land stewards.

Because the DPW oversees the maintenance of most of Arlington's open spaces, as well as its major responsibilities for water, sewer, highways, and public building maintenance, open space budget needs are often weighed internally against other departmental needs and do not emerge in public debate as a separate interest. A dedicated natural resources manager with a trained staff and an established budget is needed to oversee and coordinate capital planning and maintenance for the Town's natural open spaces and recreational facilities.

A high level of open space interest and commitment exists on behalf of the residents who serve on the Open Space Committee, Park and Recreation Commission, Conservation Commission, and many other neighborhood and Friends groups. This interest indicates the potential for expanded citizen support for park, playground, and other open space revitalization, although legal and liability issues prevent volunteers from participating in key maintenance projects.

The Town's adoption of the Community Preservation Act (CPA) in November 2014 offers a new source of funds for certain open space and recreation projects, to supplement funding designated through the Capital Planning Committee and the regular Town budget process.



COMMUNITY PRESERVATION ACT

A good deal for Arlington

Arlington CPA campaign logo. Courtesy of Community Preservation Arlington.

eed for Overall Open Space Management Plan

Arlington needs an overall open space management plan that will make use of existing Town planning documents, management structures, and resources. This management plan would provide a roadmap for all of those involved in particular open spaces. It would make clear the lines of responsibilities and it would provide a way to implement many of the goals of this Open Space and Recreation Plan, as well as the Town's Master Plan. It would also be a tool for increased public support in making our parks and open spaces the best that they can be, and insuring that every part of the Town, and every major segment of the population, gets the most up-to-date and suitable facilities possible.

As part of reviewing the existing Town management and structure, a new overall open space management plan may make recommendations for change. For example, there is a need for open space and recreation interests to be a stronger part of the existing budget process. One way to do this is to have members with open space and recreation knowledge on the Capital Planning Committee to advocate for a long-range capital planning budget for open space and recreation facilities.

The Park and Recreation Commission maintains an ongoing multi-year capital plan. However, a stronger commitment is needed by the Town to fund the project requirements at appropriate levels and in a timely way. It is the hope of the PRC that additional funding sources, such as CPA, will be used to enhance capital funds provided by the Town to accomplish proposed improvements to parks, playgrounds, and playing fields under PRC jurisdiction. It is also the desire of the Commission to see improvements made to the funding mechanisms dedicated to ordinary maintenance, which are not provided by CPA.

8

Goals and Objectives

A. Introduction

The Open Space Committee decided to accept and reinforce its commitment to previous Open Space and Recreation Plans by using the Vision 2020 goal statements on environmental and cultural and recreational concerns, cited in chapter 6, to serve as the overall community goals for this 2015-2022 Plan as well. The Committee believes these two Vision 2020 goals, which Town Meeting has adopted and which Town decision-making bodies must consider in their policy making, represent the entire Arlington community and its commitment to open space and recreation issues.

The Town has also been engaged in developing a Master Plan, which includes many recommendations and implementation actions covering open space, natural resources, historic landscapes, and public facilities including recreation. The OSC has contributed to this broader planning process to ensure that the goals and objectives in both plans are compatible and will reinforce each other. The Arlington Master Plan was adopted by the Arlington Redevelopment Board in February 2015.

B. Goals for

The following five goals and associated objectives guide the 2015-2022 Plan and are based on a review of the Town's accomplishments in meeting the goals and objectives outlined in the 2007-2014 Plan.

These new goals build on and go beyond the previous set of goals to provide a continuing mandate for the Town to pursue a coordinated and focused plan for protecting and managing open space and recreation facilities, working collaboratively within the Town and throughout the region to ensure continued protection of our fragile environment, and enhancing public awareness, accessibility, and stewardship of the existing open space resources in Arlington. The fulfillment of these goals will make Arlington a more desirable and pleasant community to live in and to visit.

Further, by accomplishing the specific actions associated with these goals, the entire community will acquire a greater sense of awareness of and appreciation for Arlington's valuable open space and recreational resources. The detailed actions to achieve these goals and objectives are listed in chapter 9, Action Plan.

- Goal 1. Acquire ecologically valuable undeveloped lands or ensure their protection through conservation restrictions or other means.**
- Goal 2. Preserve, maintain, and enhance existing open spaces, including watersheds, water bodies, and natural areas; parks, playgrounds, and outdoor recreational facilities; and historic sites and cultural landscapes.**
 - 2-a.** Preserve, maintain, and enhance the Town's natural heritage, including watersheds, water bodies, native flora and fauna, and all existing natural areas.
 - 2-b.** Preserve, maintain, and enhance Arlington's parks, playgrounds, playing fields, and other outdoor recreational facilities.
 - 2-c.** Preserve, maintain, and enhance Arlington's historic open space sites and cultural landscapes.

Goal 3. Coordinate and strengthen local and regional planning and management of open spaces in conjunction with various Town departments, commissions and volunteer groups; and work closely with nearby towns and regional entities and with state and federal officials and agencies.

- 3-a.** Work within the Town of Arlington to better coordinate, fund, and manage open space goals and objectives, especially ongoing maintenance of all resources and facilities.
- 3-b.** Work at the regional level to coordinate planning and development initiatives that protect and enhance open spaces and historic landscapes across jurisdictions.
- 3-c.** Engage state officials and state and federal agencies in efforts by the Town to acquire, maintain, and manage the Town's open space and outdoor recreation resources.

Goal 4. Increase public awareness, accessibility, and community stewardship of the Town's open spaces and recreational facilities.

- 4-a.** Support volunteer groups for major open spaces and recreational facilities.
- 4-b.** Increase public awareness and educate Town residents about open space and recreational resources.
- 4-c.** Provide greater use of and improved access to key water bodies, natural areas, and recreational facilities.

Goal 5. Use environmentally sustainable planning and engineering approaches for climate change and natural resources management.

- 5-a.** Promote adaptation to climate change and mitigation of its effects
- 5-b.** Improve water resources management, control flooding, and maintain ecological diversity (flora and fauna) in water bodies and wetlands
- 5-c.** Support Arlington's efforts to create a more environmentally sound Town and region.



*Volunteers create a rain garden at Spy Pond Park using native plants.
Courtesy of Friends of Spy Pond Park.*

9

Action Plan, 2015-2022

A. Introduction

This Action Plan for the Town of Arlington Open Space and Recreation Plan seeks to translate its goals and objectives into concrete actions for the period 2015–2022. It seeks to deliver on the goals and objectives expressed throughout this process with a program of tangible steps for the Town to take over the next seven years.

These actions are targeted to address the physical and organizational issues confronting the Town, as described and analyzed in previous sections of this Plan, especially in chapter 7. This Action Plan strives to examine various needs and visions realistically in light of current economic conditions, while maintaining a focus on the substantive issues of open space and recreation preservation, acquisition, enhancement, management, and maintenance.

Table 9-1 lists more than 75 action items, and Map 9-1 indicates the locations of selected major projects. Some of these actions are already in the planning process; others are ongoing but need additional support. While all of the actions listed are recognized as important, two issues rise to the top as being absolutely essential for any future progress toward meeting the goals of this Plan:

- Advocate for continued support from Town staff, commissions, and boards for the principle that open space and recreation are central

and lasting priorities for Arlington residents. While it is understood that there are competing needs for both financial and staffing resources in the Town, all groups must abide by the central tenet that these issues are extremely important to the residents of Arlington. Where open space and recreational resources are concerned, the goals and policies of this Plan must be followed, and the committee members and Town staff must be consulted. The Arlington Master Plan, completed in 2015, also reinforces these priorities and should be used in conjunction with this Open Space and Recreation Plan.

- Secure additional funding sources for staffing and other support to better maintain and enhance all parks, playgrounds, playing fields, and natural open spaces. Additionally, there is strong interest among community residents in obtaining additional open space resources such as the Mugar parcel and additional recreational facilities. Funds to achieve these goals are scarce and the Town must be creative in how funds are raised. Private groups such as the Arlington Land Trust and many Friends groups are actively engaged in efforts to raise funds and to obtain grants for acquisition and maintenance goals. The adoption of the Community Preservation Act in 2014 is a new opportunity for funding some open space and recreation needs.

B. Open Space and Recreation Priorities

The five priorities listed below reflect the specific goals and attainable objectives that are embedded in the overall Plan. They hold equal importance and represent the concerns shared by Town residents for acquiring, maintaining, raising funds for, and working collaboratively to preserve, protect, and enhance open space resources and recreational facilities in our densely developed Town.

Land Protection

Actively pursue long-standing goals to acquire or protect through other means ecologically valuable land parcels such as the Mugar property and Arlington's Great Meadows, as well as other wetlands or undeveloped land that could be lost as open space. Another focus is to pursue opportunities

for protecting and enhancing the natural resources associated with the Mill Brook corridor and improving public access to the area.

Maintenance and Capital Improvements

Explore multiple public and private avenues for raising additional funds for capital improvements and maintenance of all of the Town's parks, playgrounds, and other recreational facilities. Some projects already in line for capital improvements through 2022 are Magnolia and Bishop School playgrounds, Robbins Farm and Hurd/Reservoir playing fields, Wellington Park and the Reservoir Beach; ADA compliance upgrades; and a master plan for Poets Corner.

Management of Town Open Spaces

Continue to encourage Town departments, Town and regional commissions, and volunteer Friends groups to work collaboratively to better coordinate, manage, and raise funds to implement all of the open space goals and objectives. Special efforts are needed to hire additional DPW staff to advocate for and implement planning, management, and maintenance of Arlington's open spaces, natural resources, and recreational facilities.

Public Participation and Stewardship

Increase public awareness, education, accessibility, and community stewardship of the Town's open spaces through a variety of participatory education programs and volunteer activities to better monitor and improve open space and recreational facilities. A related goal is to make better use of the Town website, e-mail lists, community access TV, and other resources to enhance channels of communication and levels of participation.

Sustainable Approaches for Natural Resources Management

Take actions to improve water resources management, control flooding, maintain ecological diversity (flora and fauna), promote mitigation and adaptation to climate changes, and ensure that Arlington's residential

areas, commercial centers, and infrastructure are developed in harmony with natural resource concerns.

Table 9.1 – Acronyms for Action Plan Responsible Parties and Funding Sources

Acronym	Full Name
ABAC	Arlington Bicycle Advisory Committee
ACC	Arlington Conservation Commission
AHA	Arlington Housing Authority
ALT	Arlington Land Trust
ARB	Arlington Redevelopment Board
A-TED	Arlington Tourism and Economic Development
BOS	Board of Selectmen
CC	Cemetery Commission
CDBG	Community Development Block Grant
CPA	Community Preservation Act
CPC	Capital Planning Committee
DCR	Department of Conservation and Recreation (state)
DPW	Department of Public Works
FoAGM	Friends of Arlington's Great Meadows
HC	Historic Commission
HCA	Housing Corporation of Arlington
HDC	Historic Districts Commission
HS	Historical Society
LAND	Land Acquisitions for Natural Diversity (state)
MAPC	Metropolitan Area Planning Council (regional)
MyRWA	Mystic River Watershed Association
OSC	Open Space Committee
PARC	Parkland Acquisitions and Renovations for Communities (state)
PRC	Park and Recreation Commission
SA	Sustainable Arlington
TAC	Transportation Advisory Commission
TM	Town Meeting
ZBA	Zoning Board of Appeals

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
Goal 1: Acquire ecologically valuable undeveloped lands or ensure their protection through conservation restrictions or other means.						
	1-1. Conduct an inventory of Town-owned open spaces that are not permanently protected, and develop strategies to ensure their protection, especially sites adjacent to existing open spaces, parks, wetlands, and waterways, such as along Mill Brook, Spy Pond, Mystic Lakes, Arlington's Great Meadows, and Poets Corner.	OSC, ALT, ARB, Friends groups	X			Private funding, Town budget and capital funds
	1-2. Work with the Arlington Land Trust, other groups, Town officials, and landowners to negotiate acquisitions, conservation restrictions, transfers of development rights, or other means to protect undeveloped privately owned property that could be developed under current zoning regulations, including the Mugar lands.	OSC, ALT, ARB, private landowners, developers	X	X	X	LAND, private funding, grants, Town budget and capital funds, CPA funds
	1-3. Support the Arlington Land Trust and Conservation Commission as co-holders of a conservation restriction on the open space at the Symmes site, and support a new Friends group to help oversee the designated parks and woodlands on that property.	OSC, ALT, ACC, Friends of Symmes Conservation Area	X	X	X	Private funding
Goal 2: Preserve, maintain, and enhance existing open spaces, including watersheds, water bodies, and natural areas; parks, playgrounds and outdoor recreational facilities; and historic sites and cultural landscapes.						
2-a. Preserve, maintain, and enhance the Town's natural heritage, including watersheds, water bodies, native flora and fauna, and existing natural areas.	2-a-1. Encourage and support Town efforts to manage major water bodies and natural areas to preserve and protect biodiverse habitats for native flora and fauna (including Arlington Reservoir, Arlington's Great Meadows, McClennen Park, Spy Pond, Meadowbrook Park, and Menotomy Rocks).	OSC, PRC, ACC, DPW	X	X	X	Water Bodies Fund

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	2-a-2. Support continued funding for the Water Bodies Fund for the treatment and removal of invasive weeds and other plants from the Reservoir, Spy Pond, Hill's Pond, and other areas as needed.	TM, Vision 2020, Friends groups	X	X	X	Water Bodies Fund
	2-a-3. Encourage and support efforts by Friends groups and other volunteers to help maintain natural resources and landscapes, such as the Wildlife Habitat Garden at the Reservoir and rain gardens at various sites around Town.	OSC, Vision 2020, Friends groups, other volunteers	X	X	X	
	2-a-4. Support FoAGM's efforts to remove invasive plants and restore upland meadows and other habitats at Arlington's Great Meadows to protect and support diverse wildlife and plant species.	OSC, FoAGM, Mass Audubon	X	X	X	
	2-a-5. Continue to enforce the Massachusetts Rivers Protection Act and Wetlands Protection Act to prevent further culverting of Mill Brook, enhance its open sections, and promote daylighting.	ACC, ARB	X	X	X	
	2-a-6. Protect and enhance the water quality and ecological integrity of Mill Brook as it meanders through Town from the Reservoir, through many neighborhoods and Meadowbrook Park, and into the Lower Mystic Lake.	OSC, ACC, DPW, Friends groups, private landowners	X	X	X	
	2-a-7. Work with the Redevelopment Board and others on future development in the Mill Brook Study Area and pursue opportunities to expand and enhance public access to Mill Brook by linking existing and new open spaces.	OSC, ARB, ACC, PRC, private landowners	X	X	X	

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	2-a-8. Enhance maintenance along Arlington's stretch of the Minuteman Bikeway, and support the addition of public amenities and site improvements for users.	ABAC, DPW	X	X	X	
	2-a-9. Use native vegetation appropriate for an urban environment in Town-sponsored and private landscaping projects along the Mass. Ave. corridor and other commercial streets, and along the Bikeway.	DPW, Tree Comm., ACC, ABAC, ARB	X	X	X	
	2-a-10. Support volunteer efforts to enhance neighborhood streetscapes and street island gardens through maintenance and plantings of native trees, shrubs, and flowering plants.	Friends groups, DPW, ACC, Garden Club	X	X	X	
	2-a-11. Encourage Town-managed tree planting to a level of one new tree for every one removed on public streets, parks, and playgrounds, and work to make this official town policy.	OSC, BOS, Tree Comm., PRC, DPW	X	X	X	
	2-a-12. Work to protect endangered species, such as Englemann's Umbrella Sedge, and to eliminate invasive plants, such as Phragmites, Japanese Knotweed, Garlic Mustard, Black Swallowwort, and Oriental Bittersweet.	OSC, DPW, ACC, Friends groups	X	X	X	
	2-a-13. Develop policies to prevent the use of identified invasive species of trees, shrubs, and other plants and to enrich all natural environments with native plants.	ARB, DPW, ACC, Tree Committee	X	X	X	
2-b. Preserve, maintain, and enhance Arlington's parks, playgrounds, playing fields, and other outdoor recreational facilities.	2-b-1. Continue to upgrade the physical condition of playing fields and other recreational facilities per the Capital Plan of the Park and Recreation Commission (see Appendix C).	PRC, CPC, Recreation Dept., School Dept., sports user groups	X	X	X	PARC, Town capital funds, private user groups

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	2-b-2. Support public/private partnerships and other funding initiatives necessary to meet heavy demands on playing fields throughout the Town.	PRC, School Dept., sports user groups	X	X	X	Private user groups
	2-b-3. Encourage the involvement and coordination of youth groups, sports teams, and other users in maintaining playing fields.	PRC, DPW, Recreation Dept., teams, youth groups	X	X	X	
	2-b-4. Increase efforts towards park maintenance, with a focus on long-term fundraising strategies	Friends groups, PRC	X	X	X	
	2-b-5. Introduce educational signage and other amenities at parks (such as benches, bulletin boards, recycling receptacles, bike racks).	PRC, DPW	X	X	X	PARC, Town capital funds
	2-b-6. Pursue new recreational opportunities based on community preference, such as for more swimming and ice skating facilities.	PRC, Recreation Dept.	X	X	X	PARC, Town capital funds, CDBG
	2-b-7. Prioritize and upgrade facilities to meet ADA compliance requirements, as specified in the ADA Study of Town recreation properties, completed in 2014	PRC, Recreation Dept., DPW	X	X	X	PARC, Town capital funds, CDBG
2-c. Preserve, maintain, and enhance Arlington's historic open space sites and cultural landscapes.	2-c-1. Conduct an inventory of significant Town-owned and private historic properties in conjunction with the Historic Commission and other groups to consider conservation and historic preservation restrictions or other actions to properly preserve and maintain these sites.	OSC, ALT, HC, HS, HDC	X	X	X	MAPC Battle Road Scenic Byways Program
	2-c-2. Work with the Town to preserve and maintain historic cultural and recreational properties in need of attention, such as the Play Fair stadium at Spy Pond Field, Winfield Robbins Memorial Garden in the Civic Block, and Cyrus Dallin sculptures on Town property.	DPW, PRC, HC, Friends groups, School Dept.	X	X	X	CPA funds

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	2-c-3. Continue to upgrade and expand interpretive programs, signage, and other materials that integrate the historical, environmental, geographical, and ecological resources of the Town and region with tourism and economic development goals.	OSC, HC, HS, HDC, ARB, A-TED	X	X	X	MAPC Battle Road Scenic Byways Program
	2-c-4. Develop and implement interpretive programs encompassing the historic Mill Brook corridor, including Arlington's Great Meadows, Arlington Reservoir, the former mill ponds, Spy Pond, and the entire Alewife/Mystic Watershed.	Volunteer groups, HC, HS, FoAGM, DCR, A-TED	X	X	X	MAPC Battle Road Scenic Byways Program
	2-c-5. Support restoration work on landscapes and monuments at the Old Burying Ground and Mt. Pleasant Cemetery.	HC, CC, DPW	X	X	X	CPA funds
Goal 3: Coordinate and strengthen local and regional planning and management of open spaces in conjunction with various Town departments, commissions, and volunteer groups, and work closely with nearby towns and regional entities and with state and federal officials and agencies.						
3-a. Work within the Town of Arlington to better coordinate, fund, and manage open space goals and objectives, especially ongoing maintenance of all resources and facilities.	3-a-1. Maintain and strengthen the Open Space Committee to oversee the Open Space and Recreation Plan and to advocate actively for its goals, objectives, and priorities, in conjunction with the Master Plan's recommended Planned Preventive Maintenance program.	OSC, BOS, ARB, DPW, ACC, PRC	X	X	X	
	3-a-2. Support all efforts to provide sufficient funding for staffing and maintenance of all resources and facilities through multiple sources and programs.	OSC, DPW, PRC, ACC, TM	X	X	X	Town budget and capital funds, public/private sources

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	3-a-3. Advocate for hiring a natural resources professional to oversee the planning, management, and maintenance of Arlington's open spaces, and additional DPW staff to implement work projects.	DPW, PRC, Town Manager, TM	X	X	X	
	3-a-4. Support the Cemetery Commission in efforts to create additional burial options, including columbariums and green burials.	OSC, CC, BOS, DPW, ACC	X	X	X	
	3-a-5. Work with Town departments, boards, and commissions to clarify and enforce Town policies on proper uses of public open spaces and treatment of those who violate regulations.	OSC, BOS, ARB, ZBA, ACC, PRC, DPW, School Comm., Police Dept.	X	X	X	
	3-a-6. Work with the Capital Planning Committee to fund planning and renovation and projects at Town parks and playing fields, including Poets Corner, Robbins Farm Field, Hurd/Reservoir Fields, Turkey Hill, and Reservoir Beach.	PRC, CPC, Recreation Dept.		X	X	Town capital funds
	3-a-7. Consider ecological impacts of climate change on open space and outdoor recreation sites.	OSC, BOS, ACC, PRC, DPW	X	X	X	
	3-a-8. Develop open space and recreation capital improvements plans in conjunction with tourism and economic development projects.	PRC, A-TED, DPW, ARB, CPC	X	X	X	PARC, CPA, public/private sources
	3-a-9. Expand electronic communications and update GIS and related tools regularly in order to monitor potential real estate transactions that could impact Town goals to preserve and enhance open spaces, including small lots.	OSC, ALT, Planning Dept., DPW	X	X	X	

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	3-a-10. Collaborate with Planning Department and Redevelopment Board on appropriate actions related to planning, development, and open space uses around Town, as part of the Master Plan implementation.	OSC, Planning Dept., ARB	X	X	X	
	3-a-11. Work with Town departments and private groups on collaborative planning to increase access to affordable housing in conjunction with open space.	OSC, ALT, PRC, BOS, DPW, HCA, AHA	X	X	X	
	3-a-12. Support efforts to find new options for the temporary storage of snow, damaged trees, and other debris from natural emergencies.	DPW, PRC, ACC	X	X	X	
3-b. Work at the regional level to coordinate planning and development initiatives that protect and enhance open spaces and historic landscapes across jurisdictions.	3-b-1. Coordinate regional open space planning in the Alewife/Mystic region with organizations such as Mystic River Watershed Association; Friends of Alewife Reservation; the Tri-Community Group (Arlington, Somerville, Cambridge); and state Department of Conservation and Recreation.	OSC, BOS, ACC, MAPC, DCR, MyRWA	X	X	X	
	3-b-2. Continue to work closely with nearby towns on shared open space and recreational resources, such as the Alewife Reservation region (Belmont, Somerville, and Cambridge); Mystic Lakes/River region (Medford and Winchester); and Arlington's Great Meadows, Reservoir, Lex Farm, and McClennen Park areas (Lexington).	OSC, BOS, ACC, PRC, and other Towns' officials	X	X	X	
	3-b-3. Establish better connections with Minuteman National Historic Park, Heritage Way communities, and other entities so that the Town can enhance tourism and maximize the visibility of its historic role in the region.	OSC, HC, BOS, ARB, Planning Dept., A-TED	X	X	X	MAPC Battle Road Scenic Byways Program

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	3-b-4. Work with the Tri-Community Bikeway Group (Arlington, Lexington, Bedford) to improve maintenance, safety, and amenities on the Minuteman Bikeway.	ABAC, BOS, DPW	X	X	X	
3-c. Engage state officials and state and federal agencies in efforts to acquire, maintain, and manage the Town's open space and recreation resources.	3-c-1. Continue to work with state legislators to support and promote state policies that favor protection of and funding for open space and recreation resources.	OSC, BOS, PRC, DPW, ACC, ALT	X	X	X	
	3-c-2. Support efforts to address CSO pollution and flooding problems and to improve public access to areas bordering Alewife Brook and other state-owned water bodies along Arlington's borders with Cambridge, Somerville, Medford, and Belmont.	OSC, BOS, ACC, DCR	X	X	X	
	3-c-3. Advocate for more state funding for the Community Preservation Act to match funds raised locally, and for more dollars for local aid and grants for conservation and recreation.	OSC, BOS, PRC, ALT, ACC, HC, Planning Dept., Town Meeting	X	X	X	
	3-c-4 Advocate with the state DCR for additional financial assistance and/or ownership stake in the state-owned/town-managed ice skating facility at Ed Burns Arena.	Recreation Dept., DCR, PRC, BOS, Town Mgr.	X	X	X	Public/private partnerships
Goal 4: Increase public awareness, accessibility, and community stewardship of the Town's open spaces and recreational facilities						
4-a. Support volunteer groups for major open spaces and recreational facilities.	4-a-1. Support existing Friends and volunteer groups, and encourage the formation of new groups for major open spaces, parks, playgrounds, and natural areas.	OSC, PRC, ACC, DPW, ALT, Friends groups	X	X	X	Private funding

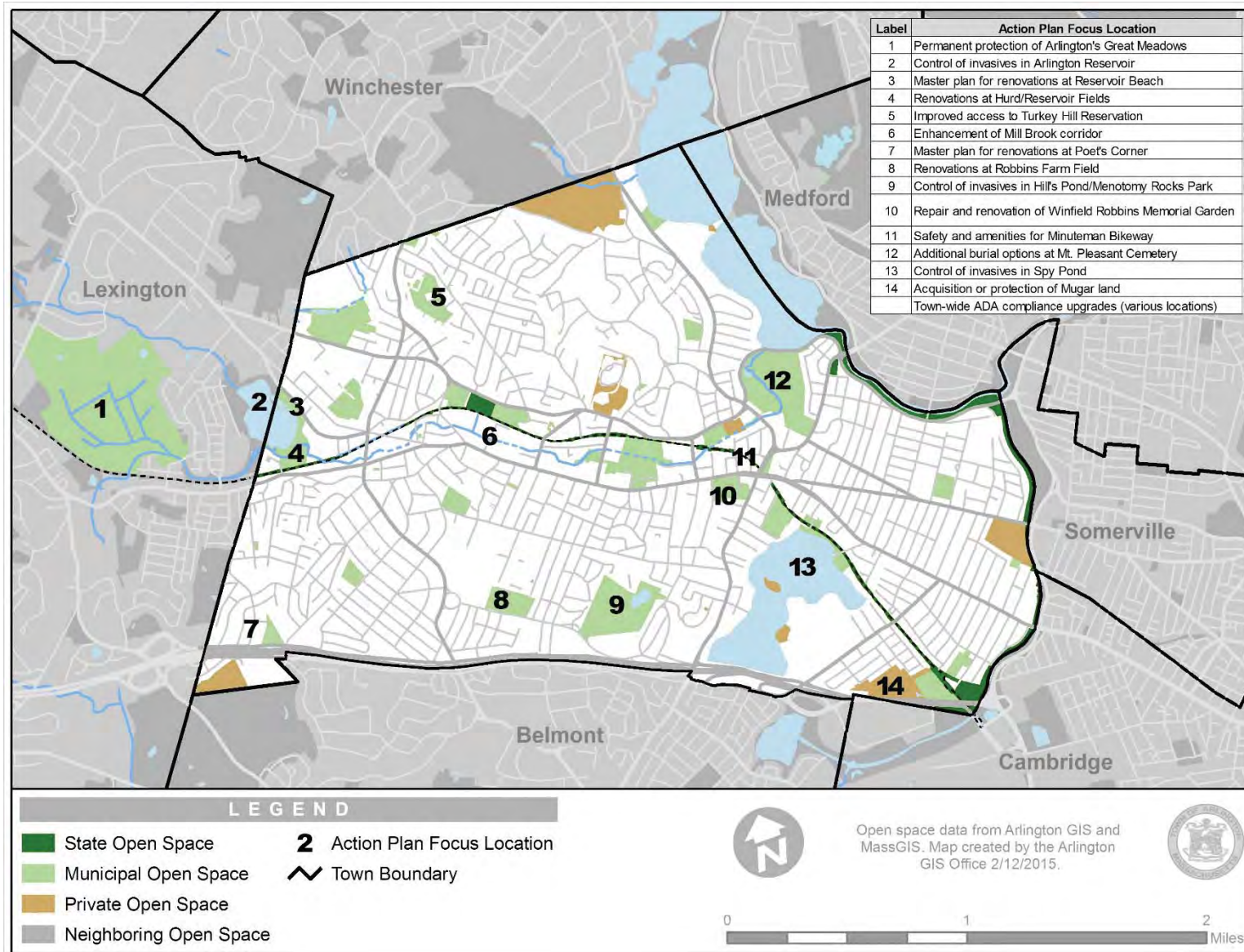
Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	4-a-2. Support the efforts of the Arlington Parks Alliance and the Conservation Land Stewards Program to collaborate with residents, users, and volunteers on both fundraising and maintenance projects.	OSC, ACC, PRC	X	X	X	Private user groups
	4-a-3. Support all Town and independent recreational and sports organizations in the funding and maintenance of playing fields, Ed Burns Arena, and other active recreational facilities.	PRC, Recreation Dept.	X	X	X	
4-b. Increase public awareness and educate Town residents about open space and recreational resources.	4-b-1. Encourage residents to participate actively in various Town committees and Friends groups, to be well informed about local resources, and to participate in opportunities for open space and recreation advocacy and maintenance.	OSC, BOS, PRC, ACC, ALT, volunteer groups	X	X	X	
	4-b-2. Prepare handouts, educational materials, and online resources to encourage greater citizen awareness and participation, especially for those who have recently moved to Arlington.	OSC, ALT, ACC, PRC, ABAC	X	X	X	
	4-b-3. Draw attention to some of the smaller and lesser-known open spaces and natural resources, to increase activity in all parts of Town.	OSC, PRC, ACC	X	X	X	
	4-b-4. Encourage participation in regular nature walks and environmental education programs for all ages (such as birding, canoeing/kayaking, and cleanup campaigns) sponsored by non-Town groups such as Menotomy Bird Club, Boys and Girls Club, and Mystic River Watershed Association.	OSC, PRC, ACC, School Dept., PTOs, Recreation Dept.	X	X	X	
	4-b-5. Work with local youth groups, churches, schools, scout groups, and other organizations to promote awareness about the Town's open spaces and participation in open space and recreational activities.	OSC and others as listed above	X	X	X	

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	4-b-6. Educate landowners of small and large lots about the benefits of conservation restrictions or other means of protection for their land and the community at large.	OSC, ALT, ACC	X	X	X	
	4-b-7. Continue to support the “adopt an island” garden program and other activities to enhance streetscapes throughout the Town.	DPW, Garden Club	X	X	X	
	4-b-8. Continue to sponsor an annual Town Day booth and participate in EcoFest for information sharing, education, and advocacy about open space issues.	OSC	X	X	X	
	4-b-9. Continue to use the local and regional media to promote and inform residents about open space and recreational activities and special events i.e., Arlington Cable Access, <i>Arlington Advocate</i> , Town Email list, Town website, GIS maps, etc.	OSC, PRC, ACC, volunteer groups	X	X	X	
	4-b-10. Promote open space and recreational resources in conjunction with other tourism and economic development activities and with improved signage and directions.	OSC, A-TED, ARB, PRC, ACC	X	X	X	
	4-b-11. Work with the Tree Committee, DPW, and others to promote opportunities for residents to plant and care for trees on their property and on public property.	DPW, Tree Comm.	X	X	X	
	4-b-12. Expand public education for homeowners about common invasive plants and native choices for more natural landscaping.	OSC, DPW, ACC, Garden Club	X	X	X	
4-c. Provide greater use of and improved access to key water bodies, natural areas, and recreational facilities.	4-c-1 Implement the recommendations contained in the ADA Study of recreation facilities conducted for the Town in 2014 by the Institute for Human Centered Design	PRC, DPW, Disability Comm.	X	X	X	PARC, Town capital funds, CDBG, CPA

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
	4-c-2. Increase the diversity of recreational options to reflect Arlington's changing demographics.	OSC, PRC, Recreation Dept., School Dept., Council on Aging	X	X	X	
	4-c-3. Investigate ways to improve public access to state-owned pathways along Alewife Brook, Lower Mystic Lake, and the Mystic Valley Parkway.	OSC, DCR	X	X	X	DCR
	4-c-4. Pursue initiatives to improve public access and create new pathways along Mill Brook and around Spy Pond.	OSC, ALT, PRC, ACC,ARB	X	X	X	
	4-c-5. Investigate opportunities for additional indoor and outdoor swimming and ice skating facilities.	PRC, Recreation Dept.	X	X	X	PARC, CPA
Goal 5. Use environmentally sustainable planning and engineering approaches for climate change and natural resources management.						
5-a. Promote mitigation and adaptation to climate change	5-a-1. Identify environmental vulnerabilities due to climate change and population and development pressures.	Town Mgr., DPW, SA	X	X	X	
	5-a-2. Develop a Hazard Mitigation Plan to protect natural resources following natural and human-caused disasters and the ongoing effects of climate change.	Town Mgr., DPW	X	X	X	
	5-a-3. Work with Town entities to develop plans and disseminate information about local climate change impacts and steps residents can take to prepare.	SA, DPW, Friends groups	X	X	X	
	5-a-4. Implement zoning and other bylaws to ensure that Arlington's residential areas, commercial centers, and infrastructure are developed in harmony with future natural resource needs.	ARB, DPW	X	X	X	

Table 9-1. Action Plan for 2015-2022 Goals & Objectives	Actions	Responsible Parties	Short-term 2015-2016	Mid-term 2017-2020	Long-term 2021-2022	Special Funding Sources
5-b. Improve water resources management, control flooding, and maintain ecological diversity (flora and fauna) in water bodies and wetlands	5-b-1. Achieve better water resources management in all Town water bodies through control of nonpoint pollution and storm water runoff, use of low-impact development and groundwater recharge practices, and control of invasive plants.	DPW, ARB, ACC	X	X	X	Water Bodies Fund
	5-b-2. Promote information about water conservation, ecological lawn and landscape treatments, and pollution control measures on both Town properties and private residences and businesses.	SA, DPW, ACC, Friends groups, Garden Club	X	X	X	
	5-b-3. Share information in updated FEMA maps regarding floodplain boundaries and implications for property owners in those areas	ARB, DPW, ACC	X	X	X	
5-c. Support Arlington's efforts to create a more environmentally sound Town and region.	5-c-1. Link Town concerns about open space with larger global concerns about air quality, energy efficiency, greenhouse gas emissions reductions, and sustainability issues in general.	OSC, BOS, DPW, SA	X	X	X	
	5-c-2. Encourage public transportation, shared cars (i.e., ZipCar), carpooling, walking, and bicycle commuting as alternatives to automobile use and as ways to improve public health through more exercise.	OSC, BOS, ABAC, SA, TAC, Walking in Arlington	X	X	X	
	5-c-3. Establish more rain gardens and community gardens, and encourage composting, container gardening, farmers markets, and other sustainable food resource practices.	PRC, Recreation Dept., DPW, Garden Club	X	X	X	
	5-c-4. Maintain the Town's status as both a Green Communities and a Tree City community.	Town Mgr, DPW, SA	X	X	X	

Map 9-1. Action Plan Focus Locations, 2015-2022



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Public Comments

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References

American Community Survey 2008-2012

Andrews, John W. 1993. Breeding bird survey for the Great Meadows. (Publication Number 211). Arlington, MA: Mystic River Watershed Association.

Andrews, John W., D. Arvidson, C. Floyd, K. Hartel, M. Rines, and L. Taylor. 1993. Birds in Arlington - A checklist and guide. Arlington, MA: Arlington Conservation Commission.

Arlington Historical Commission. 1976. Millbrook Valley, A Historical and Architectural Survey. Arlington, MA: Arlington Historical Commission.

Balazs, Eva. 1973. Spy Pond stories. Arlington, MA: Tek/Komp.

Clark, Frances. 2001. Natural Resources Inventory and Stewardship Plan on Arlington's Great Meadows. Arlington, MA: Arlington Conservation Commission.

DeLehrer, Miriam. 1979. Arlington Open Space 1979-1983. Arlington, MA: Town of Arlington.

Dober & Associates. 1972. Arlington Open Space Study. Boston, MA: Town of Arlington.

Duffy, Richard. 1997. Images of America: Arlington. Dover, NH: Arcadia Publishing.

Eliot, Charles, W. II. 1926. Report on a Town Plan for Arlington, Mass. Arlington, MA: Arlington Planning Board.

Hartel, Karsten, D. Halliwell, and A. Launer. 2002. Inland fishes of Massachusetts. Lincoln, MA: Massachusetts Audubon Society.

Hartel, Karsten, and Lee Taylor. 1992. Birds along the Minuteman Trail. Arlington, MA: Town of Arlington.

MassGIS. 2013. (Chapter 4 tables)

Massachusetts Department of Environmental Protection (DEP). 2013. 314 CMR 4.00 — Massachusetts Surface Water Quality Standards. Boston: Commonwealth of Massachusetts Department of Environmental Protection.

Massachusetts Division of Fisheries and Wildlife (DFW). 2014. Massachusetts Natural Heritage Atlas. Westborough, MA: Massachusetts Division of Fisheries and Wildlife.

Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA). 2008. Open Space and Recreation Planners Workbook, revised ed. Boston, MA: EOEEA.

Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA). 2012. Statewide Comprehensive Outdoor Recreation Plan (SCORP)..

Massachusetts Institute for Social and Economic Research (MISER). 1995. Projection of the population: Massachusetts cities and towns 1990 to 2010. Amherst, MA: University of Massachusetts.

Mattheisen, Don. 1996. Menotomy Rocks Park: A Centennial History. Arlington, MA: The Friends of Menotomy Rocks Park.

McLaughlin, Adaela Klapper. 1994. Walking the Open Spaces of Arlington, Massachusetts. Arlington: Arlington Conservation Commission.

Metropolitan Area Planning Council. 2014. Metropolitan Boston Population and Housing Demand Projections. www.mapc.org.

Mystic River Watershed Association. 2001. Assessment of Unprotected Open Space in the Upper Mystic River Watershed. Arlington, MA: Mystic River Watershed Association

Neckar, Lance, and Carole Zellie. 1980. Northwest Arlington, Massachusetts: An architectural and historical study. Arlington, MA: Arlington Historical Commission.

Old Schwamb Mill. Arlington, MA.
www.oldschwambmill.org/research/research.html

Pendleton, Sally. 1989. The Prince Hall Mystic Cemetery, Arlington, Massachusetts. A geophysical survey and archival study. Boston, MA: The Center for Archaeological Studies, Boston University.

Ritchie, Duncan. 1993. Intensive archaeological survey: Spy Pond shores project area Arlington, Massachusetts. Pawtucket, RI: The Public Archaeology Laboratory, Inc.

Smith, D.G. 1983. A new species of fresh-water Gammaroidean amphipod (Crangonyctidae) from southeastern New England. Lawrence, KS: American Microscopical Society.

Smith, D.G. 1991. Keys to the freshwater macroinvertebrates of Massachusetts. Amherst, MA: D.G. Smith.

Town of Arlington. 2007. Open Space and Recreation Plan. 2007-2012.

United States Department of Agriculture (U.S.D.A.), Soil Conservation Service. 1991. Middlesex County Massachusetts interim soil survey report (3rd edition). Acton, MA: Middlesex Conservation District.

United States Bureau of the Census. 2010 Federal Census for Arlington Massachusetts. Washington, DC: United States Bureau of the Census.

Viet, R. and W. Petersen. 1993. Birds of Massachusetts. Massachusetts Audubon Society. Lincoln, MA: Massachusetts Audubon Society.

Selected Websites

Town of Arlington – <http://www.town.arlington.ma.us/home>

Town of Arlington Master Plan Summary.
<http://arlingtonma.gov/home/showdocument?id=24168>

Town of Arlington Draft Master Plan.

<http://arlingtonma.gov/home/showdocument?id=22935>

Arlington Vision 2020 – <http://www.town.arlington.ma.us/town-governance/all-boards-and-committees/vision-2020/agendas-minutes>

Arlington Reservoir – <http://www.arlington2020.org/reservoir>

Birds in Arlington – <http://www.mrines.com/menotomy/>

Pre-Colonial History of Arlington (Menotomy) –
<http://www.tolatsga.org/aben.html>

Metropolitan Area Planning Council – <http://www.mapc.org>

Appendix A

Arlington Open Space Committee Annual Reports, 2009–2014

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Town of Arlington Open Space Committee

2009 Annual Report

The Open Space Committee (OSC) was established by Town Meeting in 1996. Members include concerned citizens and representatives of key Town departments and commissions (see list of members). The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space Plan:

The committee's primary responsibility is to prepare the Town's official Open Space and Recreation Plan every five years, and to monitor its provisions and goals and document accomplishments. The current Plan covers the period 2007–2012. It was approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). Printed copies of the Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire plan is available on the Town Web site at http://www.town.arlington.ma.us/Public_Documents/ArlingtonMA_BComm/OpenSpace/OSPlans/2007_2012/index. In November 2009 the committee learned that the EOEEA/DCS was encouraging towns to extend their active plans for two years. The committee began making those changes immediately in order to extend the scope and timeline of the plan from 2012 to 2014 and will submit them to the state by the deadline of late February 2010.

Site Management Plans:

During most of 2008 and 2009, the committee worked on site management plans for twelve key open space and recreation properties. The statewide guidelines for these site plans are part of the standard

Open Space and Recreation Plan document. One committee member worked with appropriate Town department staff, commission members, Friends groups, and other stakeholders for each of these sites, and plans are now completed for the following properties:

Arlington Reservoir; Minuteman Bikeway; Arlington's Great Meadows; Robbins Farm Park; Spy Pond Park and the Route 2 Path next to Spy Pond; Menotomy Rocks Park; Mt. Pleasant Cemetery; Meadowbrook Park; McClennen Park; Town Hall Gardens and Old Burying Ground.

These site plans will need to be updated every few years, and new sites will be identified for future management plans.

Mill Brook Initiative:

In a major new initiative, an ad hoc committee of OSC and other Town committees began meeting in March 2009 to study the feasibility of developing a Mill Brook Linear Park. This important ecological and historical feature of the Town travels nearly three miles, parallel to both Massachusetts Avenue and the Minuteman Bikeway. Enhancement of and improved access to existing open spaces are key goals of the Open Space and Recreation Plan, and recent projects at Cooke's Hollow and Wellington Park brought renewed interest to the brook and the linear park concept. These are just two of the Town-owned facilities that abut Mill Brook, thus offering public entry points for greater access to the corridor. Other properties are the Arlington Reservoir, Hurd Field, Arlington High School and fields, Buzzell Field, Mt Pleasant Cemetery, and Meadowbrook Park.

The study is looking into the feasibility of linking these properties together in a greenway with pedestrian facilities and other improvements to help restore the environmental and visual qualities of Mill Brook. This work involves reviewing parcel lines, lot ownership, and current uses, as well as photo-documenting the conditions of the brook and its nearby built neighborhood. There are 109 parcels of land along Mill Brook. The Town of Arlington owns sixteen of them, accounting for about thirty-five percent of the land abutting the brook. The other sixty-five percent is in private ownership with a variety of residential, commercial, and industrial uses.

The Mill Brook committee is also working closely with the Planning Department and Redevelopment Board in conjunction with their ongoing efforts to enhance economic development

opportunities in Arlington. Interspersed among the Town-owned parcels are numerous business and industrial zones where new kinds of brook-oriented activity could benefit from collaborative planning.

Other Activities:

The committee continued to monitor a wide range of open space concerns that affect the Town and its residents' quality of life. Some of the issues that came before the committee during the year were citizen concerns about encroachments along the Minuteman Bikeway (which prompted a letter to bikeway abutters); the proposed Green Dog pilot program and policies for off-leash times and locations at Town parks; the state Department of Conservation and Recreation's proposed Alewife Greenway Path as part of the larger Alewife Reservation Master Plan; the Cemetery Expansion Committee's explorations of alternative burial options and locations; and the Friends of Arlington's Great Meadows plan to restore upland meadows.

Other timely issues addressed by the committee included planning for the Summer Street Playground; the management of phragmites in Spy Pond; portable toilet facilities at selected parks and playing fields; and the sale of Busa Farm to the Town of Lexington. The committee is especially concerned about the future uses of the land at Busa Farm because it abuts the Arlington Reservoir, a natural resource area, and could affect the water quality of the beach. In October 2009 the committee wrote to the Board of Selectmen to encourage Arlington's active engagement with Lexington officials on the planning for this sensitive property.

OSC participated in Town Day in September 2009, as it does each year, displaying maps of local open spaces, copies of the Open Space and Recreation Plan, flyers about the Conservation Commission's Land Stewards Program and invasive plants, and a sign-up sheet for residents interested in getting more involved. Committee members also were involved with the EcoFest ecological gardening event at Town Hall in March 2009.

Goals for 2010:

During 2010 the committee will continue to address specific elements of the Action Plan outlined in the original 2007–2012 Open Space and Recreation Plan, as well as new goals and objectives

incorporated into the state-requested extension to 2014. Some activities will be educational programs on invasive plants and ecological gardening with the Arlington Garden Club, Land Stewards, and other groups; continuing work on enhancing the Mill Brook corridor and other Mystic River watershed issues; and contributing to a Conservation Commission's evaluation of Cooke's Hollow as a possible site for a memorial garden for cremains, in conjunction with the Cemetery Expansion Committee.

The committee will also continue to collaborate with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources. In particular, the committee will continue to monitor the situations regarding Elizabeth Island and the Mugar land, both significant privately owned natural resources that are priorities for conservation protection through acquisition or other means.

Submitted January 13, 2010

Town of Arlington Open Space Committee 2010 Annual Report

The Open Space Committee (OSC) was established by Town Meeting in 1996. Members include concerned citizens and representatives of key Town departments and commissions (see list of members). The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space Plan:

The committee's primary responsibility is to prepare the Town's official Open Space and Recreation Plan every five years, monitor its provisions and goals, and document accomplishments. The current Plan originally covered the period 2007–2012 as approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). In February 2010 the state approved the extension of an amended Action Plan (Chapter 9) until 2014. Printed copies of the Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire Plan is available on the Town Web site at http://www.town.arlington.ma.us/Public_Documents/ArlingtonMA_BComm/OpenSpace/OSPlans/2007_2012/index.

The acquisition of Elizabeth Island has been a long-standing goal in the Open Space Plan. In 2010 the Arlington Land Trust negotiated the purchase of this privately owned island in Spy Pond and mounted a fundraising campaign to ensure its permanent protection with a state-approved conservation restriction to be co-held by the Arlington Conservation Commission and Mass Audubon.

Site Management Plans:

The committee regularly reviews and updates site management plans for key open space and recreation properties. The statewide guidelines for these site plans are part of the standard Open Space and Recreation Plan document. Committee members have worked with appropriate Town department staff, commission members, Friends groups, and other stakeholders for each of these sites, and plans are now completed for the following properties: Arlington Reservoir; Minuteman Bikeway; Arlington's Great Meadows; Robbins Farm Park; Spy Pond Park and the Route 2 Path next to Spy Pond; Menotomy Rocks Park; Mt. Pleasant Cemetery; Meadowbrook Park; McClennen Park; Town Hall Gardens and Old Burying Ground. Additional sites that have been identified for future management plans include Hill's Hill, Wellington Park, the Crusher Lot, and water bodies such as Alewife Brook and Mill Brook that are not part of other sites.

Mill Brook Initiative:

In a major special initiative, an ad hoc committee of OSC and other Town committees has been meeting since March 2009 to study the feasibility of developing a Mill Brook Linear Park. The brook is an important ecological and historical feature of the Town that travels nearly three miles, parallel to both Massachusetts Avenue and the Minuteman Bikeway. Enhancement of and improved access to existing open spaces are key goals of the Open Space and Recreation Plan, and in 2009 projects at Cooke's Hollow and Wellington Park brought renewed interest to the brook and the linear park concept. These are just two of the Town-owned facilities that abut Mill Brook, thus offering public entry points for greater access to the corridor. Other properties are the Arlington Reservoir, Hurd Field, Arlington High School and fields, Buzzell Field, Mt Pleasant Cemetery, and Meadowbrook Park.

In April 2010 the Mill Brook Linear Park Study Group produced a report that outlined current conditions, challenges, and opportunities for seven sections along the Mill Brook corridor. The report proposed linking these properties together in a greenway with pedestrian facilities and other improvements to help restore the environmental and visual qualities of Mill Brook. This work involved reviewing parcel lines, lot ownership, and current uses, as well as photo-documenting the conditions of the brook and its nearby built neighborhood. There are 109 parcels of land along Mill Brook. The Town

owns sixteen parcels, accounting for about thirty-five percent of the land abutting the brook; the other sixty-five percent is in private ownership with a variety of residential, commercial, and industrial uses.

The Mill Brook group distributed both printed and electronic versions of the report to many Town officials, departments, and commissions for reference as a policy planning document when issues related to the brook arise. In April and May several group members led walks of the Mill Brook corridor to introduce this often unseen natural resource to interested Town officials and abutters.

The group is continuing to work closely with the Planning Department and Redevelopment Board in conjunction with their ongoing efforts to enhance economic development opportunities and overlay zoning revisions in Arlington. The former Brigham's site offered opportunities for OSC members to attend ARB meetings about that site in order to reinforce attention to the brook and adjacent parklands as part of the redevelopment process.

Other Activities:

The committee continued to monitor and contribute to a wide range of open space projects that affect the Town and its residents' quality of life, including: the recently implemented program for Off-Leash Dog Areas in Arlington Parks, which will include a fenced dog park at Thorndike Field supported with private grant funding; the state Department of Conservation and Recreation's proposed Alewife Greenway Path as part of the larger Alewife Reservation Master Plan; the Cemetery Expansion Committee's explorations of alternative burial options and locations and the related Cooke's Hollow Feasibility Study that looks at engineering, landscaping, historic interpretation, and maintenance issues, as well as possible use as a memorial park; and the development of a habitat/nature garden at the Arlington Reservoir, funded in part by a private donation.

Other timely issues addressed by the committee included Sustainable Arlington's efforts to have Arlington designed a Green Community under a state-sponsored program (which was approved at Town Meeting); planning and construction of the Summer Street Playground; the management of phragmites in Spy Pond; and the Friends of Arlington's Great Meadows project to restore upland meadows with a work project in the fall of 2010.

The sale of Busa Farm to the Town of Lexington in 2009 created special concern about the future uses of the land because it abuts the Arlington Reservoir, a natural resource and recreation area, and could affect the water quality of the beach. OSC members wrote letters during the year and spoke at a public forum held in Arlington in October by Lexington's Busa Land Use Proposal Committee to gather feedback from Arlington officials and residents. The strong consensus from the Arlington meeting was for the land to be maintained as farmland with opportunities for educational and community involvement.

OSC participated in Town Day in September 2010, as it does each year, displaying maps of local open spaces, copies of the Open Space and Recreation Plan and the Mill Brook report, flyers about the Conservation Commission's Land Stewards Program and invasive plants, and a sign-up sheet for residents interested in getting more involved. Committee members also were involved with the EcoFest ecological gardening event at Town Hall in May 2010.

Goals for 2011:

During 2011 the committee will continue to address specific elements of the Action Plan outlined in the updated 2007–2014 Open Space and Recreation Plan. Some activities will be educational programs on invasive plants and ecological gardening with the Arlington Garden Club, Land Stewards, and other groups; continuing work on enhancing the Mill Brook corridor and other Mystic River watershed issues; and contributing to future plans for the Busa land project. The committee will also continue to collaborate with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources.

Submitted January 13, 2011

Town of Arlington Open Space Committee

2011 Annual Report

The Open Space Committee (OSC) was established by Town Meeting in 1996. Members include concerned citizens and representatives of key Town departments and commissions. The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space Plan:

The committee's primary responsibility is to prepare the Town's official Open Space and Recreation Plan every five years, monitor its provisions and goals, and document accomplishments. The current Plan originally covered the period 2007–2012 as approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). In February 2010 the state approved the extension of an amended Action Plan (Chapter 9) until 2014. Printed copies of the Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire Plan is available on the Town Web site at arlingtonma.gov/openspace.

Mill Brook Initiative:

A subcommittee of OSC and other Town representatives began meeting in March 2009 to study the feasibility of developing a Mill Brook Linear Park. The brook travels nearly three miles, parallel to both Massachusetts Avenue and the Minuteman Bikeway, and represents an important ecological and historical feature of the Town. Enhancement of and improved access to existing open spaces are key goals of the Open Space and Recreation Plan, and in 2009 projects at Cooke's Hollow and Wellington Park brought renewed interest to the brook and the linear park concept. These are just two of the Town-owned facilities that abut Mill Brook, thus offering public entry points for greater access to the corridor. Other properties are the Arlington Reservoir, Hurd Field, Arlington High School and fields, Buzzell Field, Mt Pleasant Cemetery, and Meadowbrook Park.

In April 2010 the Mill Brook Linear Park Study Group produced a report that outlines current conditions, challenges, and opportunities for seven sections along the Mill Brook corridor. The report proposed linking these properties together in a greenway with pedestrian facilities and other improvements to help restore the environmental and visual qualities of Mill Brook. This work involved reviewing parcel lines, lot ownership, and current uses, as well as photo-documenting the conditions of

the brook and its nearby built neighborhood. There are more than 100 parcels of land along Mill Brook, totaling nearly 100 acres. The Town owns sixteen parcels, accounting for about thirty-five percent of the land abutting the brook; the other sixty-five percent is in private ownership with a variety of residential, commercial, and industrial uses.

The Mill Brook group has distributed both printed and electronic versions of the report to many Town officials, departments, and commissions for reference as a policy planning document when issues related to the brook arise. In May 2011 the committee chair made a short presentation to Town Meeting, and several maps and photo boards were displayed in the Town Hall lobby. Many people expressed interest in the concept, especially those not well acquainted with the brook and its environs. The report is available for review on the Town Web site at arlingtonma.gov/openspace.

The group is continuing to work closely with the Planning Department and Redevelopment Board in conjunction with their ongoing efforts to enhance economic development opportunities and overlay zoning revisions in Arlington. New Town GIS coordinator Adam Jurewski and Town Engineer Wayne Chouinard have provided valuable technical assistance with mapping and other data collection related to the brook and the abutters.

The former Brigham's site offered opportunities for OSC members to attend ARB meetings about that site in order to reinforce attention to the brook and adjacent parklands as part of the redevelopment process. The site developer agreed to perform a number of landscape enhancements to the area and construction began in late 2011.

Other Activities:

The committee continues to monitor and contribute to a wide range of open space projects that affect the Town and its residents' quality of life, including: the program for Off-Leash Dog Areas in Arlington Parks and a fenced dog park at Thorndike Field supported with private grant funding; the state Department of Conservation and Recreation's Alewife Greenway Path now under construction as part of the larger Alewife Reservation Master Plan; the Cemetery Expansion Committee's explorations of alternative burial options and locations and the related Cooke's Hollow Feasibility Study that looked at engineering, landscaping, historic interpretation, and maintenance issues, as well as possible use as a memorial park; and the development of the Wildlife Habitat Garden at the Arlington Reservoir, funded in part by private donations with assistance from the Department of Public Works.

Other timely issues addressed by the committee during 2011 included: support for the Planning Department's application for Metropolitan Area Planning Council funding to undertake a Town-wide master plan; various water bodies and invasive plant projects, such as the management of phragmites in Spy Pond and harvesting of water chestnuts in the Reservoir; and the Friends of Arlington's Great Meadows project to restore the upland meadows. New opportunities for enhancement of public open spaces include the Transportation Advisory Committee's redesign of

Downing Square in Arlington Heights; the creation of a rain garden in Spy Pond Park and plans for gardens in other town properties; and the reactivated initiatives of the Tree Committee.

Ongoing open space concerns include the future land uses at Busa Farm on the Lexington border next to the Arlington Reservoir and beach. OSC members continue to monitor the situation and support the strong consensus for continued farming activities with opportunities for educational and community involvement and some affordable housing. The future of the Mugar property in East Arlington is also of concern because of potential flooding and traffic problems if the land were to be developed. The entire Alewife region is susceptible to such problems due to existing and planned development in neighboring Cambridge and Belmont.

As part of its community education goals, OSC participated in Town Day in September 2011, as it does each year, displaying maps of local open spaces, copies of the Open Space and Recreation Plan and the Mill Brook report, flyers about the Conservation Commission's Land Stewards Program and invasive plants, and a sign-up sheet for residents interested in getting more involved. Committee members also were involved with the EcoFest ecological gardening event at Town Hall in March 2011. Several members are also contributing to a revision of the 1994 book, *Walking the Open Spaces of Arlington*, which is being coordinated by the Conservation Commission for both print and Web-based distribution.

Goals for 2012

The committee will continue to monitor and work on specific elements of the Action Plan outlined in the updated 2007–2014 Open Space and Recreation Plan and collaborate with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources.

Town of Arlington Open Space Committee

2012 Annual Report

The Open Space Committee (OSC) was established by Town Meeting in 1996. Members are appointed by the Town Manager and include concerned citizens and representatives of key Town departments and commissions. The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space Plan:

The committee's primary responsibility is to prepare the Town's official Open Space and Recreation Plan, monitor its provisions and goals, and document accomplishments. The current Plan originally covered the period 2007–2012 as approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). In February 2010 the state approved the extension of an amended Action Plan (Chapter 9) until late in 2014. Printed copies of the Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire Plan is available on the Town website at www.town.arlington.ma.us/openspace.

Mill Brook Initiative:

A subcommittee of OSC and other Town representatives began meeting in March 2009 to study the feasibility of developing a Mill Brook Linear Park. The brook travels nearly three miles through Arlington, parallel to both Massachusetts Avenue and the Minuteman Bikeway, and represents an important ecological and historical feature of the Town. Enhancement of and improved access to existing open spaces are key goals of the Open Space and Recreation Plan, and in 2009 proposed projects at Cooke's Hollow and Wellington Park brought renewed interest to the brook and the linear park concept. These are just two of the Town-owned sites that abut Mill Brook and offer convenient public entry points to access the corridor. Other properties are the Arlington Reservoir, Hurd Field, Arlington High School and fields, Buzzell Field, Mt Pleasant Cemetery, and Meadowbrook Park.

In April 2010 the Mill Brook Linear Park Study Group produced a report that outlines current conditions, challenges, and opportunities for seven sections along the Mill Brook corridor. The report proposed linking these properties together in a greenway with pedestrian facilities and other improvements to help restore the environmental and visual qualities of Mill Brook. This work involved reviewing parcel lines, lot ownership, and current uses, as well as photo-documenting the conditions of

the brook and its nearby built neighborhood. There are more than 100 parcels of land along Mill Brook, totaling nearly 100 acres. The Town owns sixteen parcels, accounting for about thirty-five percent of the land abutting the brook; the other sixty-five percent is in private ownership with a variety of residential, commercial, and industrial uses. The Mill Brook group has distributed both printed and electronic versions of the report to many Town officials, departments, and commissions for reference as a policy planning document when issues related to the brook arise. The report is available for review on the Town website at www.town.arlington.ma.us/openspace.

The group is continuing to work closely with the Planning Department and Redevelopment Board in conjunction with their ongoing efforts to enhance economic development opportunities in Arlington, as well as with the recently established Master Plan process. Town GIS coordinator Adam urowski and Town Engineer Wayne Chouinard have provided valuable technical assistance with mapping and other data collection related to the brook and the abutters, as well as mapping of storm drains and other drainage that affect water quality. In 2012 additional analysis of all abutting parcels looked at co-occurring characteristics that could help to prioritize which areas are most likely to benefit from new uses or redevelopment. For example, coordination with the developers of the former Brigham's site resulted in landscape enhancements around the brook and adjacent parklands as part of that redevelopment process.

Other Activities:

The committee continues to monitor and contribute to a wide range of open space projects that affect the Town and its residents' quality of life, including: the program for Off-Leash Dog Areas in Arlington Parks and a fenced dog park at Thorndike Field supported with private grant funding; the state Department of Conservation and Recreation's Alewife Greenway Path recently completed as part of the larger Alewife Reservation Master Plan; and the continued maintenance of the Wildlife Habitat Garden at the Arlington Reservoir, as well as a 2013 calendar featuring photos of the Reservoir environs, prepared by the Division 2020 Reservoir Committee.

Other timely issues addressed by the committee during 2012 included: participation in the Planning Department's Town-wide Master Plan kick-off meeting in October; various water bodies and invasive plant projects, such as the management of phragmites in Spy Pond and harvesting of water chestnuts in the Reservoir; and meeting with teachers at the Covenant School who are interested in getting their students involved projects related to Mill Brook. New opportunities for enhancement of public open spaces include the Transportation Advisory Committee's redesign of Downing Square in Arlington Heights; the creation of rain gardens at Spy Pond Park and Hurd Field, with plans for gardens in other town properties; the reactivated initiatives of the Tree Committee, especially in light of serious tree losses due to recent storms; and the redevelopment of the Symmes site, including additional open space and parklands that will be protected under a conservation restriction managed by the Arlington Land Trust and the Conservation Commission.

Ongoing open space concerns include the future land uses at Busa Farm on the Lexington border next to the Arlington Reservoir and beach; the status of the Mugar property in East Arlington due to potential flooding and traffic problems if the land were to be developed; and the loss of public access around the Arlington Catholic High School practice field following installation of expanded fencing around new artificial turf.

As part of its community education goals, OSC participated in Town Day in September 2012, as it does each year, displaying maps of local open spaces, copies of the Open Space and Recreation Plan and the Mill Brook report, flyers about the Conservation Commission's Land Stewards Program and invasive plants, and a sign-up sheet for residents interested in getting more involved. Several members are also contributing to a revision of the 1994 book, *Walking the Open Spaces of Arlington*, which is being coordinated by the Conservation Commission for both print and web-based distribution.

Goals for 201

The committee will begin to update the 2007–2014 Open Space and Recreation Plan and continue its collaboration with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources. Committee members will also work with the Master Plan Advisory Committee to ensure that open space and recreation resources are fully incorporated into all future town planning.

Town of Arlington Open Space Committee

201 Annual Report

Arlington's Open Space Committee (OSC) was established by Town Meeting in 1996. Members are appointed by the Town Manager and include concerned citizens and representatives of key Town departments and commissions. The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space Plan:

The committee's primary responsibility is to prepare the Town's official Open Space and Recreation Plan, monitor its provisions and goals, and document accomplishments. The current Plan originally covered the period 2007–2012 as approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). In February 2010 the state approved the extension of an amended Action Plan (Chapter 9) through 2014.

Printed copies of the Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire Plan is available on the Town website at www.town.arlington.ma.us/openspace.

Mill Brook Initiative:

A subcommittee of OSC and other Town representatives began meeting in March 2009 to study the feasibility of developing a Mill Brook Linear Park, an idea dating back many decades but not yet implemented. The brook travels nearly three miles through Arlington, parallel to both Massachusetts Avenue and the Minuteman Bikeway, and represents an important ecological and historical feature of the Town. Enhancement of and improved access to existing open spaces are key goals of the Open Space and Recreation Plan, as well as important elements of the forthcoming Arlington Master Plan, and the Mill Brook corridor offers an exciting opportunity to draw attention to this resource.

In April 2010 the Mill Brook Linear Park Study Group produced a report that outlines current conditions, challenges, and opportunities for seven sections along the corridor. The report proposed linking these properties together in a greenway with pedestrian facilities and other improvements to help restore the environmental and visual qualities of Mill Brook. This work involved reviewing parcel lines, lot ownership, and current uses, as well as photo-documenting the conditions of the brook and its nearby built neighborhood. There are more than 100 parcels of land along Mill Brook, totaling nearly 10 acres. The Town owns sixteen parcels, accounting for about thirty-five percent of the land

abutting the brook; the other sixty-five percent is in private ownership with a variety of residential, commercial, and industrial uses. The Mill Brook group has distributed both printed and electronic versions of the report to many Town officials, departments, and commissions for reference as a policy planning document when issues related to the brook arise. The report is available for review on the Town website at www.town.arlington.ma.us/openspace.

The group is continuing to work with the Planning Department and Redevelopment Board in conjunction with their ongoing efforts to enhance economic development opportunities in Arlington, as well as with the broader Master Plan process. Town GIS coordinator Adam urowski and Town Engineer Wayne Chouinard have provided valuable technical assistance with mapping and other data collection related to the brook and the abutters, as well as mapping of storm drains and other sources that affect water quality. Additional analysis of all abutting parcels has looked at co-occurring characteristics that could help to prioritize which areas are most likely to benefit from new uses or redevelopment. For example, coordination with the developers of the former Brigham's site resulted in landscape enhancements around the brook and adjacent parklands as part of that redevelopment process.

Other Activities:

The committee continues to monitor and contribute to a wide range of open space projects that affect the Town and its residents' quality of life, including: the program for Off-Leash Dog Areas in Arlington parks and a fenced dog park at Thorndike Field supported with private grant funding; the state Department of Conservation and Recreation's Alewife Greenway Path as part of the larger Alewife Reservation Master Plan; and the continued maintenance of the Wildlife Habitat Garden at the Arlington Reservoir.

Other timely issues addressed by the committee during 2013 included the Planning Department's Town-wide Master Plan process; various water bodies and invasive plant projects, such as the management of phragmites in Spy Pond and harvesting of water chestnuts in the Reservoir; and the establishment of a new community farm at Busa Farm in Lexington, adjacent to the Arlington Reservoir and Town-owned open space. New opportunities for enhancement of public open spaces include the redesign of Downing Square in Arlington Heights; the creation of rain gardens at Spy Pond Park and Hurd Field, with plans for more gardens at other town properties; the initiatives of the Tree Committee; and the redevelopment of the Symmes site, including additional open space and parklands that will be protected under a conservation restriction managed by the Arlington Land Trust and the Conservation Commission.

Ongoing open space concerns include the status of the Mugar property in East Arlington due to potential flooding and traffic problems if the land were to be developed; the loss of public access around the Arlington Catholic High School practice field following installation of expanded fencing

around new artificial turf; and improving access to all Town open spaces in general, for all ages and abilities.

As part of its community education goals, OSC participated in Town Day in September 2013, as it does each year, displaying maps of local open spaces, copies of the Open Space and Recreation Plan and the Mill Brook report, flyers about invasive plants and the Conservation Commission's Land Stewards Program, and a sign-up sheet for residents interested in getting more involved.

Goals for 201

The committee will prepare an updated Open Space and Recreation Plan for 2011–2020, including a request for CDBG funding to prepare the final report that will be submitted to the state for approval in December 2014. The 2010 annual survey distributed with the Census mailing in January 2014 featured questions about open space issues, and the results will be incorporated in the new report, along with input from other public outreach activities during the year. The committee will continue its collaboration with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources. In particular, OSC members will work with the Master Plan Advisory Committee and Planning Department to ensure that open space and recreation resources are fully incorporated into all future town planning.

Town of Arlington Open Space Committee 201 Annual Report

Arlington's Open Space Committee (OSC) was established by Town Meeting in 1996. Members are appointed by the Town Manager and include concerned citizens and representatives of key Town departments and commissions. The committee meets monthly to exchange ideas and discuss ways to protect and maintain the Town's open space and recreation resources. The committee serves an oversight function but does not have direct management responsibility for Town properties. Its main purpose is to enhance communication and coordination among those entities that do have ownership and management authority. In addition, the OSC seeks to raise broad-based community concerns and to advocate for the protection, stewardship, and appropriate uses of the Town's open spaces.

Open Space and Recreation Plan:

The committee's primary responsibility is to prepare and monitor the Town's official Open Space and Recreation Plan, review its provisions and goals, and document accomplishments. The current Plan originally covered the period 2007–2012, as approved in December 2007 by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) Division of Conservation Services (DCS). In February 2010 the state approved the two-year extension of an amended Action Plan (Chapter 9) through 2014.

During most of 2014, the committee members worked on updating the entire Plan to cover the period 201 –2022. In January 2014 the committee, through the Department of Planning and Community Development, submitted a request for CDBG funding to hire a consultant to help prepare the final report that will be submitted to the state for approval in early 201 . The CDBG request was approved by Town Meeting in May, and Ralph Willmer of the planning and design firm HB was commissioned to assist the committee, as he did in 2007 for the current Plan.

One of the outreach efforts used to obtain community input for the new Plan was the 2020 annual survey distributed with the Census mailing in January 2014. The featured questions asked about public awareness of some of the Town's smaller and lesser-known open spaces, reasons for visiting open spaces or not, perceptions about which open space and recreation resources are adequate or not, and preferred means of learning about these resources and related programs. Another key source of new information was the Town's Master Plan process, which held numerous public meetings and includes chapters that document open space and natural resources and public facilities and services, including recreation. In addition, Adam Murrowski, the Town's director of GIS and systems analyst, prepared many new town-wide maps and specific maps of key open spaces based on the new GIS database.

Printed copies of the current 2007–2014 Plan are available in the Robbins Library, Planning Department, Town Clerk's office, and certain other Town offices. The entire Plan is also available on the Town website at <http://www.town.arlington.ma.us/town-governance/all-boards-and-committees/open-space-committee/open-space-plans>. The new Plan for 201 –2022 will be posted online after it is approved.

Other Activities:

The committee continued to monitor and contribute to a wide range of open space projects and activities that affect the Town and its residents' quality of life, including: endorsement of the Community Preservation Act, which will offer a new source of funds for open space and recreation resources; support for the state Department of Conservation and Recreation's completion of the Alewife Brook Greenway Path as part of the larger Alewife Reservation Master Plan; and the continued maintenance of the Wildlife Habitat Garden at the Arlington Reservoir. As a result of the 2020 survey, the committee worked with staff of the *Arlington Advocate* to publish a series titled Hidden Gems, which included maps and information about some of the lesser-known Town properties that were highlighted in the survey, such as Meadowbrook Park, Hill's Hill, Mt. Gilboa, and Cooke's Hollow.

Other timely issues addressed by the committee during 2014 included active participation in the Planning Department's Town-wide Master Plan process; various invasive plant and water bodies projects, such as the management of phragmites in Spy Pond and harvesting of water chestnuts in the

Reservoir; the establishment of a new community farm at Busa Farm in Lexington, adjacent to the Arlington Reservoir and other Town-owned open space; and expansion of the ACROSS Lexington trail system into Arlington's Great Meadows and the Reservoir, in coordination with the Conservation Commission. The redevelopment of the Symmes site includes nearly nine acres of public open space in two landscaped parks and a woodland area that are accessible to all residents and are protected under a conservation restriction managed by the Arlington Land Trust and the Town's Conservation Commission.

Ongoing open space concerns include the status of the Mugar property in East Arlington due to potential flooding and traffic problems if the land were to be developed; the loss of public access at the Arlington Catholic High School practice field due to expanded fencing around new artificial turf; and improving maintenance of and access to all Town open spaces in general, for all ages and abilities. The committee's previous work on researching and raising awareness about Mill Brook and the possibility of enhancing that natural resource corridor has been adopted as a priority by the Arlington Redevelopment Board and is featured as a recommendation in the Master Plan.

As part of its community education goals, OSC participated in EcoFest in March and Town Day in September, as it does each year. The OSC booths displayed maps of local open spaces, copies of the Open Space and Recreation Plan and the Mill Brook report, flyers about invasive plants and the Conservation Commission's Land Stewards Program, and a sign-up sheet for residents interested in getting more involved.

Goals for 201 :

Following completion and distribution of the 201 –2022 Open Space and Recreation Plan early in the year, the committee will begin to work on a few new projects, including expanded use of the Town website to disseminate the new maps and other information about local open spaces and recreational facilities. Members will continue their collaborations with other Town entities and community groups to advocate for the proper maintenance and management of the Town's valuable open space and recreation resources. In particular, members will work with the Master Plan Advisory Committee and Planning Department to ensure that open space and recreation recommendations are fully incorporated into all future town planning.

Ann LeRoyer
Chair, Open Space Committee

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Appendix B

Vision 2020 Survey Results, 2014

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Appendix B.
Selected Portions of Vision 2020 Town Survey 2014



Vision 2020

Vision 2020 Town Survey 2014 Summary Report

**HELP SHAPE THE FUTURE: *ARLINGTON'S
LIBRARY, OPEN SPACES, AND HOUSEHOLD
WASTE PROGRAMS***

FALL 2014

Vision 2020 Town Survey 2014 Summary Report

Vision 2020's Town Census-Insert Survey 2014 – "Help Shape the Future: Arlington's Library, Open Spaces, and Household Waste Programs" – was designed to support the long-range planning efforts of three town organizations. The 6,536 surveys returned to Vision 2020 by the March deadline represent 34% of Arlington's households, a record return for the survey.

A new, highly collaborative survey development and reporting process provided data and comments to the three participating organizations within weeks of the initial survey returns. The process made it possible for the organizations to use the data early in their planning efforts and to take actions in response to incoming comments from survey respondents.

This summary report outlines the new survey process and presents survey findings and observations separately for each organization. Survey results helped each group enhance planning, validate their responses to community needs, and take action where needed. Examples of the early applications of the 2014 survey findings appear in the *2014-15 Recycling and Trash Guide*, in the minutes of the Library's presentation at the 2014 Town Meeting, and in Open Space articles in [The Arlington Advocate](#).

How Was the Survey Different This Year?

The 2014 Census Survey differed from previous surveys in format, question development, and feedback to participating groups. Outcomes from these changes were highly beneficial to the survey participants and the town.

Format Changes

The 2014 survey was four pages long, in contrast with the six-page editions of previous years. The longer surveys included a full page introduction to the year's topic, four pages of survey questions, and a page about Vision 2020. The Vision 2020 information included a list of Task Groups and their current projects, and provided sign-up space for potential volunteers.

Tighter funding limits for printing the 2014 survey and distributing its findings led to the four-page format. The new first page consisted of a brief introduction to the survey goals, specific survey instructions, and a description of Vision 2020. It included links to Vision 2020 on the town website, an email address, and an invitation to join any of the listed Task Groups. Survey questions began on the bottom of the first page.

In recent years, the survey was offered in both paper form and online. Two factors prompted the decision to offer the 2014 survey in paper form only. First, the number of online survey responses had decreased significantly and accounted for only 10% of responses in 2013. Second, integration of data from online and paper surveys had become excessively time consuming, given that the survey is produced and analyzed by volunteers.

Topic Identification, Question Development, and Feedback

With the Town Planning Department's guidance, Vision 2020 identified and contacted three town organizations that were either developing long-range plans or fulfilling a State-mandated planning requirement. The groups were Arlington Library, including Robbins Library and the Fox Branch Library; the Open Space Committee, and the Department of Public Works-Household Waste Program. A highly

collaborative, interactive process between Vision 2020 and each of these organizations resulted in clearly defined goals for their participation in the survey. Each group drafted questions to obtain the information they wanted. Then, Vision 2020 and each participating group worked closely in a back-and-forth process to refine the questions. This approach was intended to generate information of immediate use to each town organization, and was targeted at helping each group accomplish specific goals.

Within the first four weeks after the survey was sent to Arlington households, Vision 2020 received over 5,000 completed surveys, a new record. Vision 2020 established a protocol for providing each participant organization with respondent comments from their section of the survey as surveys continued to come in. This flow of preliminary data during the survey return period allowed the participant groups to make the earliest possible use of their new data and incorporate the information in their planning endeavors.

Survey Data – Respondent Demographics

Each year Vision 2020 collects demographic data to help shed more light on responses to survey questions. Town groups that will benefit from the survey are asked to identify demographic information that would best enhance interpretation of their data. This year, for example, household size was added to support analysis of the DPW data.

The response to demographic questions was very good, as 92% to 98% of survey respondents answered these questions. The majority of respondents, 52% (3,353), have lived in Arlington for less than 16 years. Thirty percent (1,900) have lived in town for 16 to 40 years, and 18% (1,180) for over 40 years.

Seventy-four percent (4,654) own their own dwelling, and 26% (1,650) rent. Fifty-four percent (3,347) live in a single family home, 29% (1,806) in a 2-family, 6% (351) in a 3-8 unit building, and 11% (715) in a 9+ unit building.

The majority, 57% (3,444) live in a 1-2 person household. Thirty-seven percent (2,213) live in a 3-4 person household, and 5% (321) in a 5-6 person household. Less than 1% (20) live in a household with 7+ people.

The survey asked the age groups of all members of the household. The largest age groups represented in respondents' households are 30-44 (32%, 2,119) and 65 to 75+ (32%, 2,115) followed by under 18 (30%, 1,933), 45-54 (26%, 1,708) and 55-64 (24%, 1,543).

All precincts were well represented, with a range from 3.6% to 5.3% and a median of 4.7%.

Open Space Committee

Arlington's Open Space Committee is revising the Town's 2007 – 2014 Open Space Plan to provide more current information and to fulfill a requirement of the State Executive Office of Energy and Environmental Affairs. While many of the Town's recreational areas and large open spaces (such as the Minuteman Bikeway, Spy Pond, Menotomy Rocks Park, and Robbins Farm) are popular and well-used, a variety of smaller parks and natural areas are not as well known. The Committee wanted to know residents' level of awareness of these spaces and reasons why they do not know about or visit them.

The Open Space Committee designed its survey questions to create better awareness of and access to open spaces and recreational facilities. Questions addressed use of 12 lesser known town parks/open spaces areas, opinions about adequate numbers of specified town resources, preferred methods of learning about open space and recreational resources/programs, and reasons people might

not use the parks or recreational facilities. The survey included a web address so respondents could find the locations of the parks.

Of the 12 selected locations, the most visited open space site is the new Alewife Greenway Path. The sites receiving the highest percents of “Don’t Know About” responses are Cooke’s Hollow, Window on the Mystic, Meadowbrook Park, and Hill’s Hill. Respondents commented that they did not know some sites by the names in the survey and indicated they didn’t know about some of the recreational resources in the town. The Open Space Committee took action on these findings even before Vision 2020 made its report to Town Meeting in May. The Committee is working with The Arlington Advocate to publish a “hidden gems” series about the town’s open spaces.

Ann LeRoy, Chair of the committee said, “The survey is bearing immediate direct results in terms of community education, and it will be incorporated into the next Open Space Plan for posterity.”

Visits to Open Space Sites

The survey provided a menu of 12 town parks/open spaces and asked “Have any household members visited any of these open spaces?” Respondents could check “Yes,” “No,” or “Don’t Know About.” The response rates for this question range from 92% for Great Meadows and Alewife Greenway to 88% for Cooke’s Hollow, Ottoson Woods, and Window on the Mystic.

The most visited of the selected sites (answered “Yes”) is Alewife Greenway Path at 60% (3,595) of the 6,536 respondents, followed by Arlington’s Great Meadows, 46% (2,776), and Reservoir Path and Wildlife Habitat Garden, 44% (2,623). More survey respondents answered these items than other items on the menu of sites. The least visited sites (answered “No”) are Turkey Hill, 40% (2,370) of 6,536 respondents; Ottoson Woods, 40% (2,306), and Mt. Gilboa, 38% (2,207).

The sites receiving the most “Don’t Know About” responses are Cooke’s Hollow, 56% (3,227) of 6,536 respondents and Window on the Mystic, 56% (3,225), followed by Meadowbrook Park, 49% (2,886), and Hill’s Hill, 48% (2,818). The first two of these sites received the highest “No Response” percents at 12% each.

The Open Space section of the survey received significantly more comments than the Library or Department of Public Works sections. Written comments support the observation that if respondents don’t know about a site, they don’t use it. Further, volunteers who prepared the surveys for scanning observed that a number of respondents filled in both the No and Don’t Know About columns for some or all sites. Some respondents noted that they didn’t know the names of sites or didn’t know them by that name, but might have visited them; others said they didn’t know the location of the named site. For this question and the later Use of Open Space question, three respondents cited disabilities as a reason for nonuse, sometimes because of access issues; five cited their age as a reason for not visiting a site.

Does Town Have Sufficient Open Space and Recreation Resources?

To gather opinions about available resources, the survey offered a menu of 10 town open space/recreational amenities and asked, “Does the Town have an adequate number of these resources?” Respondents could check “Yes” or “No.” Resources receiving the highest percents of response (items were checked rather than left blank) were *Walking/biking trails*, 85% of 6,536; *Neighborhood parks*, 83%; *Children’s playgrounds*, *Natural areas/trails*, and *Outdoor/indoor swimming*, all 82%.

Over 50% of the 6,536 respondents found 7 of the 10 resources to be in adequate supply. Resources receiving the highest percents of "Yes" (adequate) responses, were *Children's playgrounds*, 74% (4,864) of 6,536; *Neighborhood parks*, 69% (4,526); *Walking/bike trails*, 68% (4,461) and *Indoor ice skating*, 63% (4,109).

Again illustrating a lack of awareness of some of the town's resources, a number of respondents wrote "Don't know" or "???" next to one -- or often more -- menu items.

We wondered if length of residence in town would make a difference in perceptions of adequacy of resources. In some cases, it does seem to make a difference. Respondents living in town for 26-40 years are most likely to say there is adequate indoor ice skating. The range for "Yes" is 75% for <5 years to 86% for 26-40 years. A quarter of respondents here for <5 years said there is not enough indoor ice skating.

Regarding *Walking/bike trails*, respondents in town for 40+ years are most likely to say there are enough such trails, 87%. The range of "Yes" percents is 78% for both <5 and 16-25 years to 87% for 40+ years.

Resources receiving the highest percents of "No", not adequate, were *Outdoor/indoor swimming*, 54% (3,552) of 6,536; *Outdoor ice skating*, 42% (2,733); *Community gardens*, 41% (2,663). Considering length of residence, for *Outdoor/indoor swimming*, the range of "No" percents is wide -- 57% for those in town 40+ years to 70% for those here 6-15 years. Those in town <5 to 15 years were most likely to say there is not enough *Outdoor ice skating*, 55% and 56% respectively. There is a wide range of percents for respondents saying there are not enough *Community gardens*. While 57% of those in town 16-25 years said "No", 41% of those here 40+ years say "No", i.e. the longest term residents are more likely to be satisfied with the existing gardens.

Information Source Preferences

The Open Space Committee wanted to know the best ways to publicize the town's resources and events. They offered a menu of six sources of information and asked "How do you learn about open space and recreational resources/programs?" Respondents could check up to three sources. Ninety-one percent of the 6,536 survey respondents answered this question.

We looked at two aspects of responses to this question: 1) what percent of all 6,536 survey respondents chose an option and 2) what percent is each option of the 14,241 responses to "How do you learn about resource/programs?" Two town electronic sources received the highest response. *Arlington Recreation or Town websites*, chosen by 61% (3,605) of the 6,536 respondents, represented 25% (3,605) of the 14,241 sources selections. *Town Notices – email*, chosen by 50% (2,954) of all survey respondents, garnered 20% (2,954) of the selections. Least used is *Signage/announcement at a given site*, chosen by 19% (1,139) of respondents and representing 8% (1,139) of all selections. Comments included these suggestions for additional sources: Google maps, neighbors, seasonal brochures by mail, and Senior Notes at the main library.

Use of Open Spaces/Reasons for Nonuse

The survey asked, "Does your household use Arlington's open spaces and recreational facilities?" and offered a "Yes" or "No" response. Ninety-four percent (6,132) of survey respondents answered this question. Seventy-one percent (4,631) of the 6,536 respondents said "Yes", they use these resources; 23% (1,501) said "No". A few respondents checked both Yes and No, and a few checked Yes but wrote in that they only use one or two sites.

Respondents who answered "No" were asked, "If no, why not?" and given a menu of seven

reasons. They could check all that applied. Twenty-six percent (1,720) of the 6,536 respondents checked one or more items on this list. The top reason – *Don't know locations/programs* -- represents 26% (907) of the total 3,425 responses to the list. This response seems reinforced by the percents of "Don't Know About" answers to the visits to town open spaces question and by the number of write-in "Don't knows" for the adequate resources question. Eighteen percent (600) *Don't know about open spaces in their neighborhoods*, and 17% (569) are *Not aware of opportunities for casual recreational activities*.

Some respondents who said "Yes", they do use open space/rec facilities, also checked items from the list.

General positive comments were written in by at least six respondents who cited good maintenance, nice job on tennis court lighting, great playgrounds, walking trails are awesome, love the area next to the Library, Arlington is great place to walk and enjoy open space.

Recommendations

In the responses to three Open Space questions, we find evidence that respondents do not know about some of Arlington's open spaces and recreational sites. Looking at the length of residence data associated with the "Don't Know About" comments, we note that it is as likely that respondents who have lived in town for <5 years do not know about open spaces and recreational sites as those here 26 to 40+ years.

An educational or publicity campaign can take advantage of well used open space sites to post information about other sites and events. However, to attract residents who may not yet engage with the town's open spaces, publicity needs to reach out to a broader audience. Through its new series in The Arlington Advocate, the Open Space Committee has already initiated a strategy for increasing awareness of town sites and resources. (See example in Appendix) We suggest the Open Space Committee develop additional outreach efforts as part of their plan.

**Help Shape the Future:
Arlington's Library, Open Spaces,
and Household Waste Programs**

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Dear Arlington Residents,

Since 1991, Vision 2020, a collaboration of Town leadership and townspeople, has used an insert to the Town's Annual Census Mailing to inform you about Arlington and to ask your opinions on aspects of life in our town. Since the survey reaches about 18,000 Arlington households, it offers Vision 2020 and the Town an important opportunity to seek information that can be used to develop plans that serve all who live, work in, or visit the Town.

Town departments and organizations regularly take time to assess their goals, services, operation, and strategies and to develop new plans. Their planning may be required by state or other mandates or by normal planning cycles. The 2014 survey focuses on three town groups that are engaged in long range planning: the Arlington Library, the Open Space Committee, and the Department of Public Works-Household Waste Programs.

Each section of the survey includes a brief explanation of how your responses will help the town department or committee asking the questions. Your answers will provide valuable input to these organizations as they plan how best to serve Arlington.

COMPLETING THE SURVEY: Paper only or no on line version

Use One ball point pen to fill in bubbles **completely**. Do not write comments on the survey. Instead, email your comments to vision2020@town.arlington.ma.us or submit them on a separate paper with your survey. All responses received **March 1, 2014** will be included in the report to Town leadership, Town Meeting, and the public, as well as in the Town's Annual Report.

Return our complete survey in the same envelope as your Census form, OR hand deliver to the Town Clerk's Office, Town Hall 2nd floor, OR mail to:

Vision 2020 Census Survey 2014
Town Hall, 730 Massachusetts Avenue, Arlington, MA 02476

What is Vision 2020

Vision 2020 is a Committee of the Town of Arlington, established by Town Meeting in the early 1990's. Its mission is to foster collaboration between residents and the Town to further the nine Town Goals enacted in 1993 and to create, implement, and review methods for open, town-wide participation. Vision 2020's Task Groups and Committees support and advance accomplishment of the goals: **Community and Citizen Service, Diversity, Education, The Environment, Reservoir Support, Sustainable Arlington, Culture and Recreation, Public Art, Communication, Fiscal Resources, Governance, Business.** A volunteer organization, Vision 2020 welcomes participation.

To learn about Vision 2020, read about us in the Town's Annual Report on the Town website arlingtonma.gov or visit our section of the website at arlingtonma.gov/vision2020 to see a list of Task Group meeting times. To join one of our Task Groups or Committees as a volunteer, email us at vision2020@town.arlington.ma.us or call 781-316-3093 and leave your name, address and phone contact.

Vision 2020 Standing Committee and Task Group Co Chairs

Adria Arch, Brad Barber, Kathleen Bodie, Claire Carswell, Adam Chapdelaine, Joe Connelly, Dan Dunn, Andrew Fischer, Bruce Fitzsimmons, Joey Glushko, David Garbarino, David Haas, Mary Harrison, Leba Heigham, Jane Howard, Gordon Jamieson, Elizabeth Kapati, John Leone, Josh Lobel, Gail McCormick, Cheryl Miller, Brucie Moulton, Angela Olszewski, Stephen Ricci, David White

I. Demographic Questions

What is your precinct number (See left side of your Census form above Resident Data).

1	2	3	4		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please tell us about yourself and individuals in your household:

What age groups are represented by members of your household:

under 18	18 – 29	30 – 44	45 – 54	55 – 64	65 – 74	75 +
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Number of years lived in Arlington ☐ 6 - 1 ☐ 16 - 2 ☐ 26 - 40 ☐ 40 ☐

Best description for your housing ☐ Single family ☐ 2-family ☐ 3 - 8 units bldg ☐ 9 units bldg ☐

Do you own or rent ☐ Own ☐ Rent ☐

How many people are in your household ☐ 1 - 2 ☐ 3 - 4 ☐ 5 - 6 ☐ 7 ☐ 8 or more ☐

2 Arlington's Libraries Revisions in the New Branch Library

The Library is developing a long-range plan to improve services to the community and to anticipate changing needs.

A. How likely is it that your household would use these Library services **Fill in one bubble for each service:**

Library Resources/Services	Very Likely	Likely	Not Likely
Check out books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attend technology/computer trainings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use study/meeting rooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Download eBooks/eAudiobooks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use Arlington/regional history resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Borrow museum passes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attend library-sponsored events/programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attend book discussion groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a makerspace with a 3D printer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use Library databases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use Library social media (Facebook, blog)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Request an item from another library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B. How frequently do people in your household use the Library

	Just started	Daily	Weekly	Monthly	Infrequently	Never
In person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C. What would increase your use of the Library **Fill in a bubble for ALL answers that apply.**

More hours	<input type="radio"/>	Variety of useful programs	<input type="radio"/>
Summer weekend hours	<input type="radio"/>	More downloadable content	<input type="radio"/>
Additional popular materials	<input type="radio"/>	Better parking	<input type="radio"/>
More entertaining programs	<input type="radio"/>	Additional locations	<input type="radio"/>

D. Has your household used the Library as a place to **study** ☐ **work** ☐ **or** **cool** ☐ **Yes** ☐ **No** ☐

Open Space Committee

Arlington's Open Space Committee is revising the Town's 2007-2014 Open Space and Recreation Plan to provide more current information and to fulfill a requirement of the State Executive Office of Energy and Environmental Affairs. Many of the Town's recreational areas and large open spaces (such as the Minuteman Bikeway, Spy Pond, Menotomy Rocks Park, and Robbins Farm) are popular and well-used, but a variety of smaller parks and natural areas are not as well known. To find the location of these parks, go to arlingtonma.gov/maps and click on the 2020 Map of Arlington.

The following questions are designed to create better awareness of and access to all open spaces and recreational facilities.

- A. Have any household members visited any of these open spaces **Fill in one bubble for each open space.**

Open Spaces	es	o	on t now A out
Arlington's Great Meadows (in East Lexington)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meadowbrook Park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mill Brook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooke's Hollow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mt. Gilboa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Turkey Hill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ottoson Woods/Crusher Lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Summer St. Multigenerational Park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hill's Hill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Window on the Mystic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alewife Greenway Path	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reservoir Path and Wildlife Habitat Garden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- B. Does the Town have an adequate number of these resources **Fill in one bubble for each resource.**

	es	o		es	o
Children's playgrounds	<input type="radio"/>	<input type="radio"/>	Off leash dog recreation areas	<input type="radio"/>	<input type="radio"/>
Neighborhood parks	<input type="radio"/>	<input type="radio"/>	Outdoor ice skating	<input type="radio"/>	<input type="radio"/>
Natural areas/nature trails	<input type="radio"/>	<input type="radio"/>	Indoor ice skating	<input type="radio"/>	<input type="radio"/>
Community gardens	<input type="radio"/>	<input type="radio"/>	Tennis courts	<input type="radio"/>	<input type="radio"/>
Outdoor/indoor swimming	<input type="radio"/>	<input type="radio"/>	Walking/bike trails	<input type="radio"/>	<input type="radio"/>

- C. How do you prefer to learn about open space and recreational resources/programs **Fill in UP TO THREE bubbles.**

Arlington Recreation or Town websites	<input type="radio"/>	Signage/announcement at a given site	<input type="radio"/>
Town of Arlington Notices (email)	<input type="radio"/>	Seasonal Arlington Rec brochures	<input type="radio"/>
On-line sources (Arlington List, Patch, Wicked Local, our Arlington)	<input type="radio"/>	Arlington Advocate (print media)	<input type="radio"/>

- D. Does your household use Arlington's open spaces and recreational facilities **es** ☐ **o** ☐

If no, why not **Fill in bubbles for all answers that apply.**

Don't know about locations and programs	<input type="radio"/>
Don't know about open spaces in our neighborhood	<input type="radio"/>
Not interested in open spaces, in general	<input type="radio"/>
Not interested in outdoor recreation and competitive sports	<input type="radio"/>
Not aware of opportunities for casual, non-competitive recreational activities	<input type="radio"/>
Can't access due to disability barriers	<input type="radio"/>
Not convenient to travel to and park at some locations	<input type="radio"/>

Public Works Household Waste Program

The Town would like to know more about your residential trash, recycling, and yard waste practices in order to continue to update and improve the recovery of **recyclable and reusable** materials.

- A. How many 32-gallon equivalent bags or barrels of **TRASH** – not including recycling -- does your household put out on the curb or in your building's dumpster each week, on average

Fill in ONLY ONE bubble.

One or fewer ☐ Two ☐ More than two ☐

- B. How many recycling containers does your household put out on the curb each week, on average

Fill in ONLY ONE bubble.

One 16-gallon bin (common-size) or less ☐
More than one 16-gallon bin ☐
One recycling barrel (approximately 32 gallons) ☐
More than one recycling barrel or equivalent ☐
Our building has large rolling recycling totes that tenants share ☐
Our building does not offer recycling for tenants ☐

- C. What does your household do with yard waste? Yard waste is: **Fill in ALL answers that apply.**

Left on the property ☐
Composted on the property ☐
Put on curb for Town collection, April - November ☐
Removed by a hired lawn service ☐
Handled by condo association/apartment building ☐

- D. What does your household do to dispose of food waste?

Fill in ALL answers that apply.

Include food waste with trash ☐
Compost some or all food waste at home ☐
Contract with a private company to take food waste for composting ☐
Use a garbage disposal ☐
Use a worm bin ☐

Thank you for completing our Survey and Town Census form

Please return our complete Survey in the envelope provided with our Town Census form or see directions on Page 1 of this survey

Vision 2020 Annual Survey Results for 2014

Open Space Committee

Arlington's Open Space Committee is revising the Town's 2007-2014 Open Space and Recreation Plan to provide more current information and to fulfill a requirement of the State Executive Office of Energy and Environmental Affairs. Many of the Town's recreational areas and large open spaces (such as the Minuteman Bikeway, Spy Pond, Menotomy Rocks Park and Robbins Farm) are popular and well used, but a variety of smaller parks and natural areas are not as well known. To find the location of these parks, go to <http://arlingtonma.gov/maps> and click Vision 2020 Map of Arlington.

How does the survey benefit the Open Space Committee

A review of Open Space data showed low use of some sites and high percents of 'Don't know About' responses. To address this, Open Space Committee has initiated a series of Arlington Advocate articles which will feature open space sites, starting with the least known sites. According to Ann LeRoyer, Chair of the Open Space Committee, 'The survey is immediately bearing direct results in terms of community education, and it will be incorporated into the next Open Space Plan for posterity.'

The following questions are designed to create better awareness of and access to all open spaces and recreational facilities.

Have any household members visited any of these open spaces

	No	es	Don't know about	No	es	Don't know about
Arlington's Great Meadows (in East Lexington)	1,832	2,776	1,434	30	46	24
Meadowbrook Park	2,110	837	2,866	36	14	49
Mill Brook	2,026	1,77	2,044	3	30	3
Cooke's Hollow	1,983	48	3,227	34	10	6
Mt. Gilboa	2,207	901	2,679	38	16	46
Turkey Hill	2,370	1,77	1,926	40	27	33
Ottoson Woods/Crusher Lot	2,306	930	2,39	40	16	44
Summer St. Multigenerational Park	1,912	1,708	2,266	32	29	38
Hill's Hill	1,878	1,117	2,818	32	19	48
Window on the Mystic	1,879	624	3,22	33	11	6
Alewife Greenway Path	1,7	3,9	861	26	60	14
Reservoir Path and Wildlife Habitat Garden	1,98	2,623	1,730	27	44	29

Does the Town have an adequate of these resources

	No	es	No	es
Children's playgrounds	49	4,864		
Tennis courts	1,334	3,68		
Neighborhood parks	922	4,26		
Natural areas/nature trails	1,64	3,71		
Community gardens	2,663	2,414		
Outdoor/indoor swimming	3,2	1,817		
Off-leash dog recreation areas	1,83	3,42		
Outdoor ice skating	2,733	2,302		
Indoor ice skating	998	4,109		
Walking/bike trails	1,108	4,461		

Does your household use Arlington's open spaces and recreational facilities

	No	es
No	1,01	23
es	4,631	71
No Response	404	6

If so then why not

	No	es
Don't know about locations and programs	907	26
Don't know about open spaces in our neighborhood	600	18
Not interested in outdoor recreation and competitive sports	407	12
Not aware of opportunities for casual, non-competitive recreational activities	69	17
Can't access due to disability barriers	208	6
Not convenient to travel to and park at some locations	362	11
Not interested open spaces, in general	372	11

How do you prefer to learn about open space and recreational resources/programs (Fill up to three bubbles)

On-line sources (Arlington List, Patch, Wicked Local, our Arlington	2,272	16
Arlington Recreation or Town websites	3,60	2
Town of Arlington Notices (email)	2,9 4	21
Signage/announcement at a given site	1,139	8
Seasonal Arlington Rec brochures	2,330	16
Arlington Advocate (print media)	1,941	14

Vision 2020 Annual Survey Results for 2014

Open Space Committee

Arlington's Open Space Committee is revising the Town's 2007-2014 Open Space and Recreation Plan to provide more current information and to fulfill a requirement of the State Executive Office of Energy and Environmental Affairs. Many of the Town's recreational areas and large open spaces (such as the Minuteman Bikeway, Spy Pond, Menotomy Rocks Park and Robbins Farm) are popular and well used, but a variety of smaller parks and natural areas are not as well known. To find the location of these parks, go to <http://arlingtonma.gov/maps> and click Vision 2020 Map of Arlington.

The following questions are designed to create better awareness of and access to all open spaces and recreational facilities.

Explanation of tables

These tables show how answers for Open Space responses vary for different demographic segments of the survey respondents.

The percentages displayed indicate the % of that segment that provided a specific response. For instance 148 or 11 of households in Arlington 6-1 years responded No to the question of whether there are an adequate number of Children's playgrounds. Percentages in most categories add to 100 %.

Does the town have an adequate number of these resources

Years in Arlington	Children's playgrounds				Tennis courts				Neighborhood parks				Natural areas/nature trails			
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
	148	1,216	11	89	38	843	31	69	226	1,170	16	84	384	1,002	28	72
6-1 yrs	112	1,391	7	93	376	1,049	26	74	268	1,266	18	82	473	1,034	31	69
16-2 yrs	66	793	8	92	21	601	26	74	160	70	18	82	30	8	3	6
26-40 yrs	71	626	10	90	167	49	2	7	131	8	18	82	24	44	36	64
40 yrs	88	790	10	90	17	660	21	79	124	764	14	86	211	63	2	7

Years in Arlington	Community gardens				Outdoor/indoor swimming				Off leash dog recreation areas			
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
	713	8		4	938	41	69	31	387	873	31	69
6-1 yrs	791	64		4	1,044	47	70	30	446	92	32	68
16-2 yrs	466	3	7	43	93	279	68	32	299	39	36	64
26-40 yrs	337	319	1	49	433	271	62	38	206	448	31	69
40 yrs	331	478	41	9	49	376	7	43	23	99	28	72

Years in Arlington	Outdoor ice skating				Indoor ice skating				Walking/bike trails			
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
	684			4	307	934	2	7	306	1,107	22	78
6-1 yrs	806	62	6	44	22	1,187	18	82	320	1,218	21	79
16-2 yrs	423	393	2	48	147	688	18	82	200	697	22	78
26-40 yrs	336	317	1	49	97	79	14	86	148	90	20	80
40 yrs	448	393	3	47	180	684	21	79	117	803	13	87

Vision 2020 Annual Survey Results for 2014

Open Space Committee

Explanation of tables

These tables show how answers for Open Space responses vary for different demographic segments of the survey respondents.

The percentages displayed indicate the % of that segment that provided a specific response. For instance 337 or 21 of households who have lived in Arlington 6-1 years responded No to the question of whether they use Arlington's open spaces and recreational facilities. Percentages in most categories add to 100 %.

Does your household use Arlington's open spaces and recreational facilities?

Years in Arlington	No		Yes		No Response	
	337	21	1,217	76	1	3
6-1 yrs	274	16	1,400	80	74	4
16-2 yrs	192	19	790	77	46	4
26-40 yrs	212	24	60	69		6
40+ yrs	47	39	6	48	18	13

Ages of household members	No		Yes		No Response	
Under 18 yrs	14	8	1,711	91	37	2
18-29 yrs	223	22	736	73	0	
30-44 yrs	276	13	1,784	84	9	3
45-64 yrs	270	16	1,382	81	6	3
65-74 yrs	339	30	697	62	86	8
75+ yrs	44	4	391	39	17	16

Appendix C

**Arlington Park and Recreation Commission, Capital Project Summary,
12/30/2014**

Appendix C
Arlington Park and Recreation Commission
Capital Project Summary
12/30/2019

2019	2019	
Magnolia Field/Playground		4 ,000
• Prepare a design and documents for construction of the renovation of Magnolia playground and basketball court (including storm water management and landscaping).		
Summer Street/Buck Fencing		4 ,000
• Install new fencing at Summer Street Field and Buck Field to protect motorists, neighbors and field users from stray balls.		
ADA Plan Implementation		0,000
		<u>0,000</u>
2019	2019	
Robbins Farm		0,400
• Prepare design and documents for construction of the renovation of Robbins Farm field including new grading, turf and irrigation.		
ADA Plan Implementation		0,000
		<u>600,400</u>
2019	2019	
Reservoir		6 ,000
• Prepare a Master Plan for the renovation of the Reservoir showing potential upgrades and cost for the parking lot, beach area, bathhouse, concession stand, playground, access to the water, shoreline trail and community gardens.		
Wellington Playground		447,100
• Prepare a design and documents for construction of a new playground and landscaped area coordinated with the goals and objectives of the Mill Brook Linear Park.		
ADA Plan Implementation		0,000
		<u>62,100</u>
2019	2019	
Reservoir		7 0,000
• Prepare a final design and documents for construction of the upgrades based on the approved Master Plan.		
ADA plan Implementation		0,000
		<u>800,000</u>
2019	2020	
Bishop Playground		278, 00
• Prepare a design and documents for the renovation and upgrades to the Bishop School playground.		
ADA Plan Implementation		0,000
		<u>328, 00</u>

2020	2021	
Poets Corner		74,200
• Prepare a Master Plan for Poets Corner showing options for locating the baseball and soccer fields with the potential removal or reconstruction of the tennis courts, playground and potential acquisition of additional property for parking, passive or active recreational use.		
• Prepare a final design and documents for construction of the upgrades based on the approved Master Plan.		
ADA Plan Implementation		<u>0,000</u>
		624,200
2021	2022	
Hurd Field		38 ,000
• Prepare a design and documents for the renovation and upgrades to the Hurd Field including grading, irrigation, new backstops, spectator seating, landscaping and pedestrian pathways to the Reservoir.		
ADA Plan Implementation		<u>0,000</u>
		43 ,000
2022	202	
Hurd Field		38 ,000
• Complete the construction of the project based on the documents prepared in 2021.		
Turkey Hill		78,7 0
• Prepare options for upgrades for public access to Turkey Hill with input from neighbors and community groups.		
• Based on public input, prepare a final design and document of the recommended upgrades to Turkey Hill.		
ADA Plan Implementation		<u>0,000</u>
		13,7 0

otes

1. The above information is from the APRC Capital Plan dated 12/13/0 .
2. The above items do not include the annual Feasibility Study cost of 10,000.
3. The above items do not include any costs for the capital upgrades to the Ed Burns Arena.

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Appendix D

Town Disability Policy

Additional information is posted on the Town of Arlington website:

<http://www.town.arlington.ma.us/town-governance/all-boards-and-committees/disability-commission>

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COMMISSION ON DISABILITY, TOWN OF ARLINGTON

20 ACADEMY STREET, SUITE 203, ARLINGTON, MASSACHUSETTS 02476-6436 (781) 316-3431



March 4, 2015

To Whom It May Concern:

The Town of Arlington takes very seriously and continues to work towards full compliance with its obligations under Title II of the Americans with Disabilities Act (ADA) and with regulations of the Massachusetts Architectural Access Board (MAAB) in a effort to ensure that people with physical, sensory, cognitive and other disabilities have equal access to Town facilities, services and programs.

The Town with the assistance of the Institute for Human Centered Design (IHCD) completed in December 2014 an updated self evaluation report on behalf of the Town of Arlington's Recreational Department and Park and Recreation Commission as part of the Town's on-going effort to access the current level of accessibility in its programs, services, and activities. This ADA Self-Evaluation report is intended to be used as the basis for an updated Transition Plan, which in the future will be used as a living document used to monitor corrective actions.

The Town's Public Works Department is currently in the process of completing with the assistance of IHCD a self-evaluation of the Town's Public Ways when completed in early 2015 this report will also be incorporated into the Town's updated Transition Plan.

The Town also contracted with IHCD to evaluate and make recommendations for improving accessibility of the Town's Website. An extensive report by IHCD was completed prior to the launch of the Town's main site (arlingtonma.gov) in July of 2014. The report has helped informed workflow related to ADA compliance for staff training and helped identify ADA deficiencies in the website.

The Town in its Master Plan has committed if possible before the end of 2016 to completing a self-evaluation of all Town owned and operated buildings, programs and services for inclusion in the Town's Transition Plan.

It is intended that all work to bring the Town into full compliance with the ADA and MAAB will be completed as capital budgeting permits within the next five to ten years in order to address the operational needs and obligations of the Town of Arlington.

The Town of Arlington has become a much more inclusive and friendlier community to individuals with disabilities since the passage of the ADA on July 26, 1990. Town officials and residents deserve credit for this accomplishment, however more still needs t be done. The Town looks forward to completing this process within the next five to ten years.

Sincerely,

A handwritten signature in blue ink, which appears to read "John Jones", is written over a faint, larger "John Jones" watermark.

Jack Jones
ADA Coordinator

COMMISSION ON DISABILITY, TOWN OF ARLINGTON

20 ACADEMY STREET, SUITE 203, ARLINGTON, MASSACHUSETTS 02476-6436 (781) 316-3431



March 4, 2015

To Whom It May Concern:

The Arlington Commission on Disability was established by a unanimous vote of Town Meeting on May 3, 1993 in accordance with Massachusetts General Laws Chapter 40, Section 8J. It was established to inform, monitor, and advise the residents and officials of the Town of Arlington and its agents on issues affecting the civil rights of individuals with disabilities consistent with the Americans with Disabilities Act and related laws such as IDEA (the Individuals with Disabilities Education Act) and Section 504 of the Rehabilitation Act of 1973. On November 14, 1995 the Town Manager appointed Jack Jones as the Town's ADA Coordinator. Mr. Jones continues in that role today. In the role as ADA Coordinator he is the contact point for people who need information about the ADA, and other disability laws such as IDEA (the Individuals with Disabilities Education Act) and Section 504 of the Rehabilitation Act of 1973.

The Arlington Commission on Disability was appointed by the Town Manager with the approval of the Board of Selectmen in November 1993. The purpose of the Arlington Commission on Disability is to act as a centralizing force in the Town of Arlington by providing information, referral, guidance, coordination, and technical assistance to public and private agencies, individuals, organizations and institutions engaged in activities and programs intended to eliminate discrimination against persons with disabilities.

Assist the Town and its citizens in bringing about full integration and participation of people with disabilities in the Town of Arlington through the following activities:

1. research local problems of people with disabilities;
2. advise and assist town officials and employees in ensuring compliance with state and federal laws and regulations affecting people with disabilities;
3. coordinate or carry out programs designed to meet the problems of people with disabilities in coordination with the Massachusetts Office on Disability;
4. review and make recommendations about policies, procedures, services, activities, and facilities of departments, boards and agencies of Arlington as they affect people with disabilities;
5. provide information, referrals, guidance and technical assistance to individuals, public agencies, business and organizations in all matters pertaining to disabilities;
6. coordinate activities of other local groups organized for similar purposes.

The Commission meets on the third Wednesday of every month from 4-6 P.M. in the Disability Office, Room 203 at 20 Academy Street. These meetings are open to the public.

Sincerely,

A handwritten signature in blue ink that reads "John Jones".

Jack Jones
ADA Coordinator

**ARLINGTON COMMISSION ON DISABILITY
MEMBERSHIP
2015**

The Commission when at full membership shall consist of nine members, all of whom shall be appointed by the Town Manager, subject to the approval of the Board of Selectmen. In accordance with Commission By-Laws and Massachusetts General laws Chapter 40 Section 8J the Commission is composed as follows:

1. A majority of commission members shall consist of people with disabilities;
2. One member shall be a member of the immediate family of a person with a disability;
3. One member of the commission shall be either an elected or appointed official of Arlington;
4. The remaining members shall be parents, friends, providers of services to persons with disabilities, or other interested residents of Arlington.

The following are currently members of the commission.

	Original Appointment	Term Expires
Kerrie Fallon Vice Chairperson	08/14/06	06/30/15
Cynthia DeAngelis	01/12/15	01/31/16
Susan James	01/10/05	01/31/17
Michael Rademacher	04/23/12	06/30/15
Maureen St. Hilaire Chairperson	06/14/04	01/31/16
John Thompson	02/27/12	01/31/15

The following have been recommended for membership by the Town Manager for the approval of the Board of Selectmen.

Susan Savage Tennant
Beverley Bevilacqua

ANNUAL TOWN REPORT

2014

COMMISSION ON DISABILITY

In its twenty-first year of service, the Commission on Disability continued to provide information, referral, guidance, and technical assistance to Arlington officials, residents, public and private agencies, and others to ensure that people with physical, sensory, cognitive, mental illnesses and other disabilities have equal access to town facilities, services and programs. The Commission when at full membership has a slate of nine Commissioners, all volunteers. As mandated by State law, the majority of Commissioners have a disability. The mandate brings an intimate and informed understanding of disabilities to the Commission's agenda and ultimate decisions. The Commission continues to bring awareness to Arlington policy makers and other residents as to the legal rights of people with disabilities, enforcing those rights and working towards community inclusion to make Arlington a stronger town by capitalizing on the strengths that each person living and working here has to offer.

The following are Commission on Disability activities that took place during 2014.

- The Commission co-sponsored the sixth annual Diversity Career Fair at Arlington Town Hall. Thirty employers from health care, financial, retail, and non-profit organizations participated in the career fair.
- The Commission continued its curb cut ramp project by installing sixty curb cut ramps during 2014.
- The Commission had an information booth at Town Day 2014 to answer questions and provide resources about disability legislation.
- The Commission reviewed and issued recommendations on several variance requests that had been submitted to the Massachusetts Architectural Access Board.
- The Commission continued to meet with Town Officials to discuss the rights of people with disabilities in order to work towards full community inclusion within the Town of Arlington.
- The Commission purchased six additional assistive listening devices for use at Town Hall meetings.
- The Commission met with the Town's Economic Development Coordinator about improving entry access at public accommodations.
- The Commission worked with the True Story Theatre to help promote and identify challenges faced by individuals with visible and invisible disabilities.

The following are Commission on Disability goals for 2015 that will continue to revolve around the very clear parameters of the Americans with Disability Act.

- The Commission plans to continue to advocate for a safer driveway, sidewalk surfaces and improved accessible parking spaces at the Senior Center Building.

- In observance of the twenty-fifth anniversary of the signing of the Americans with Disabilities Act into law on July 26, 1990, the Commission will plan and/or participate in an appropriate event to honor this anniversary during July 2015.
- The Commission will continue to advocate for and ensure the rights of Arlington residents living with disabilities.
- The Commission plans to co-sponsor at the Arlington Town Hall, with the Massachusetts Rehabilitation Commission, the seventh Annual Diversity Career Fair.
- Will monitor compliance of the Massachusetts Avenue Corridor Project with disability regulations.
- Will work with the True Story Theatre in 2015, with a focus on people with mental illness and other invisible and visible disabilities. In order to make our community more aware and educated about this significant group of people.
- Will continue to identify areas where curb cuts are needed and will work with Town Departments for improvement of snow and ice removal.
- Will summarize rules and responsibilities of the Commission and laws of the Commonwealth that pertain to disability regulations.

In 2014 Commission members Janice Dallas, Burton Pusch, Heidi Hample, and Rachel Buonopane resigned from the Commission after serving a combined total of sixteen years. Their accomplishments and dedication in helping to make Arlington a more inclusive community while serving on the Commission was recognized and greatly appreciated. Also in 2014 the Commission welcomed Cynthia DeAngelis as a member of the Commission.

The Commission meets on the third Wednesday of each month at 4:00 P.M. in the conference room of the Housing and Disability Program Office located in Ste. # 203, 20 Academy St., Arlington (the Senior Center Building). Meetings are open to the public and residents are invited to attend to observe or voice their concerns.

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Appendix D

ADA Self-Evaluation

Prepared for the Town of Arlington by the Institute for Human Centered Design

Excerpts from the December 15, 2014 Final Report.

The complete report is available from the Town of Arlington Recreation Department, and is posted on the Town of Arlington website:

<http://www.town.arlington.ma.us/town-governance/all-boards-and-committees/park-recreation-commission>

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Town of Arlington

FINAL REPORT

ADA Self-Evaluation (as basis for Transition Plan)

Prepared by
Institute for Human Centered Design
December 15, 2014



200 Portland Street, First Floor
Boston, MA 02114
617-695-1225 voice/tty
www.HumanCenteredDesign.org

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PART A - Executive Summary

Introduction

The Institute for Human Centered Design (IHCD) has prepared this ADA Self-Evaluation report on behalf of the Town of Arlington's Recreation Department and Park and Recreation Commission as part of the Department's and Town's on-going effort to assess the current level of accessibility in its programs, services, and activities. This ADA Self-Evaluation report is intended to be used as the basis for the Transition Plan, a living document used to monitor corrective actions.

The Recreation Department, a self-sustaining Department of the Town, prides itself for offering "safe, quality and affordable programs and facilities for citizens of all ages and abilities". IHCD can attest to the Department's commitment for inclusion and eagerness to continue improving accessibility in its facilities. In reviewing the Department's yearly reports over the past decade, it is clear that the Department, in concert with the Park and Recreation Commission, and in collaboration with Friends of Parks groups, the expertise and guidance of the Disability Commission, and other engaged residents and groups, has made important efforts to increase accessibility within many park and playground facilities. Despite these efforts, the following recurring issues were identified in many facilities:

- Gaps in pedestrian access to site arrival points;
- Gaps in pedestrian access between site access points and facility program areas;
- Gaps in integrated seating at team areas and spectator seating areas;
- Lack of access to facility amenities due to landscape borders and edging;
- Lack of accessible routes through and within program areas due to ground surface issues;
- Lack of informational and directional signage and wayfinding assistance.

This ADA Self-Evaluation report includes model policies and procedures for adoption by the Recreation Department, and a summary of architectural barriers and proposed barrier removal solutions for 32 Town-owned and Department-operated facilities such as recreational buildings, parks, fields, and playgrounds. All are designed to help move the Recreation Department towards full compliance with its obligations under Title II of the Americans with Disabilities Act (ADA) and/or the Massachusetts Architectural Access Board (MAAB).

All recommendations should be considered preliminary until this ADA Self-Evaluation report has been shared by the Recreation Department and Park and Recreation Commission with the disability community before the end of the project. Consequently, when the Department's director presents findings and recommendations to the community and receives feedback, some may need adjustment. Together, the ADA Self-Evaluation and Transition plan will enable the Recreation Department and Park and Recreation Commission to engage in capital budgeting preparation for capital work to be completed within the next five to ten years to address the operational needs and obligations of the Town of Arlington.

For the sake of clarity, this ADA Self-Evaluation report is organized into three parts: 'Part A - Executive Summary' provides an 'Introduction' to this project as well as summaries of the 'Evaluation of Programs and Services' and 'Evaluation of Facilities', and 'Prioritizing Accessibility Modifications - Recommended Order of Considerations'. 'Part B - Evaluation of Non-discriminatory Policies and Practices in Programs, Communications, Services, and Activities' offers an analysis of policies and procedures administered by the Recreation Department, and a detailed survey of the Department's website information and online registration procedures. Finally, 'Part C - Evaluation of Facilities' identifies issues found as well as a remediation plan in each of the facilities surveyed.

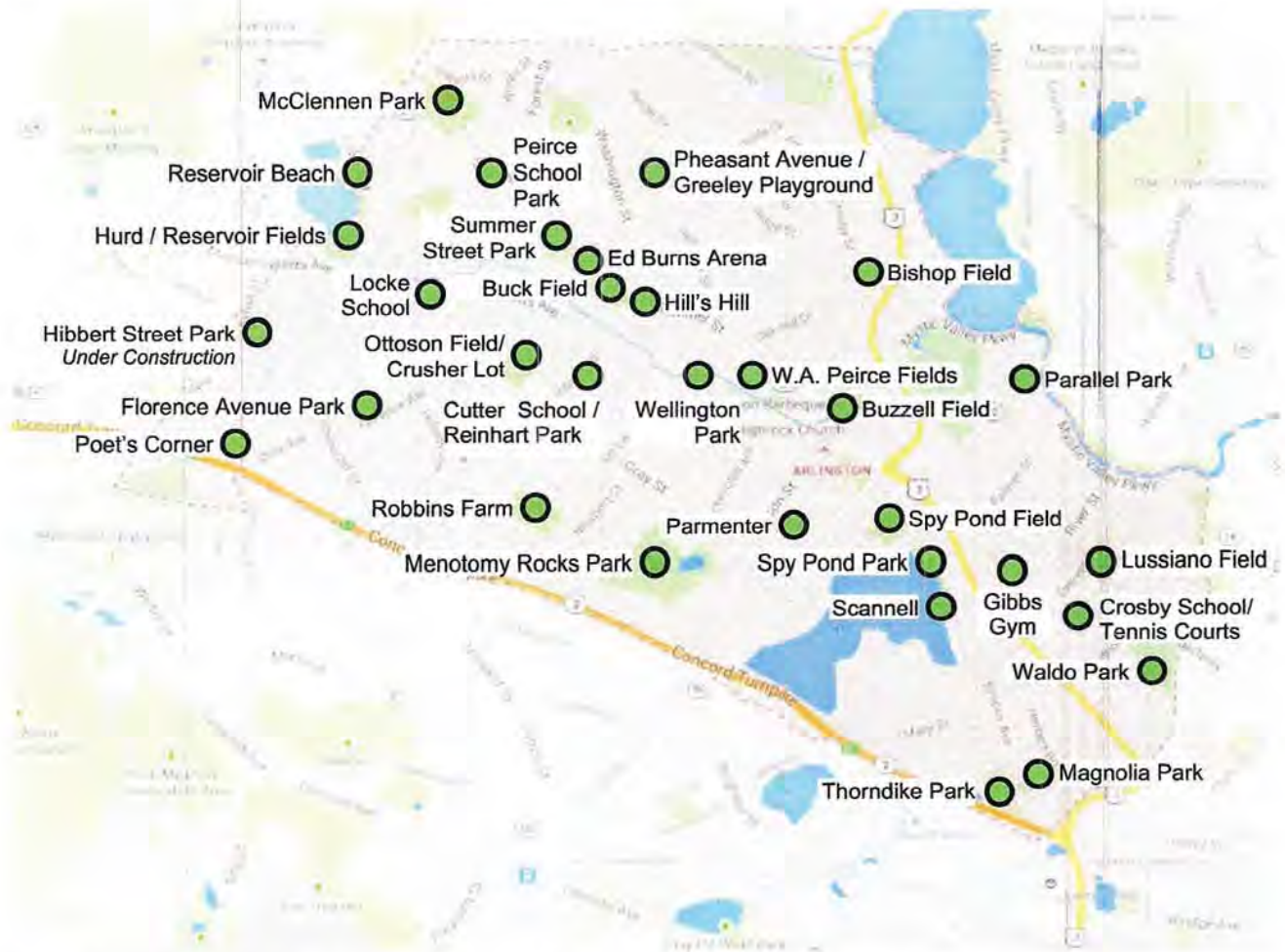


Figure 1 – Location of all 32 facilities assessed as part of this ADA Self-Evaluation report.











Town of Arlington, Massachusetts

Vote: Approve Submission of Statement of Interest to MSBA - Arlington High School

Summary:

Adam W. Chapdelaine, Town Manager

ATTACHMENTS:

Type	Description
 Document for Approval	Vote for BoS
 Backup Material	Report - HMFH
 Backup Material	Diagram Boards
 Backup Material	On-site Insight Report
 Backup Material	Statement of Interest
 Backup Material	Memorandum from School CFO - Enrollment
 Backup Material	Enrollment Data
 Backup Material	Enrollment Data

Resolved: Having convened in an open meeting on March 30, 2015, prior to the closing date, the Board of Selectmen of Arlington, in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated on or before April 10, 2015 for the Arlington High School located at 869 Massachusetts Avenue, Arlington, Massachusetts, which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future.

3. Prevention of the loss of accreditation due to the poor state of the facility.
4. Prevention of severe overcrowding expected to result from increased enrollments currently being experienced at the elementary and middle school levels.
5. Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility as is consistent with a complex of buildings whose last major renovation took place more than thirty years ago.
7. Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements as needed to bring a structure, sections of which are not less than thirty years and some sections as much as one hundred years old, up to modern educational standards of safety, security and comfort;

and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the Town to filing an application for funding with the Massachusetts School Building Authority.



Arlington High School

Analysis of Programmatic Needs

Arlington, Massachusetts

February, 2014

HMFH Architects, Inc.

130 Bishop Allen Drive

Cambridge, MA 02139

t 617 432 2200

f 617 876 9775

www.hmfh.com



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2 Arlington High School Use and Condition

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Technology and Other Necessary Features
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8 Conclusion

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- A. Circulation Diagram
- B. Non-HS Space Use Diagram
- C. HS Program Space Use Diagram
- D. Safety/ Security Issues Diagram

1- Introduction

Arlington High School is a large complex (nearly 400,000 square feet) centrally located in the community. Its main façade fronts onto Massachusetts Avenue, set back from the road by a green space with mature trees. At the rear of the complex are several athletic fields (baseball, softball, football, and track and field). The school building has expanded several times since the original 1914 six-story school house. And in the 100 years of its existence general and special education, technology, sustainability, building codes, and accessibility requirements, have all greatly changed and evolved. All of these have an impact on the ability of a facility to function as it is intended and as it needs to, to serve its occupants into the future.

The Town of Arlington has begun to identify the physical plant upgrade requirements through a capital assessment report developed by On-site Insight. This report has identified maintenance upgrades to be made over a 20-year period. The scope identified includes replacement of exterior windows and doors, interior and exterior lighting, and mechanical systems. The scope includes two new elevators and restoration of the clock steeple. The estimated costs for the work identified, in today's dollars, is \$32.4 million. The report notes that it does not include costs for upgrades associated with building code issues or structural changes, nor does it include significant hazardous material abatement. Over a twenty-year period the report identifies flooring upgrades, roof replacement, and locker replacement. The report identifies a through-slab water infiltration problem, but only includes costs to study the problem.

It is clear that due to its age, the complex requires significant upgrades to (or replacement of) all of the building systems and finishes. This is because either they are obsolete, not in working order, and a drain on energy and maintenance resources, or because they simply do not comply with current code standards for accessibility, plumbing fixture quantities, structural implications, or hazardous material abatement. A significant renovation of the facility would require meeting, wherever reasonable, all of the current code requirements. The On-site Insight capital assessment report assumes that the physical plant needs are solved incrementally over two decades. If the Town of Arlington chooses to upgrade the facility in this manner it will likely not trigger a full upgrade per the current code, but it will also not qualify for Massachusetts School Building Authority (MSBA)/State assistance to help pay for the costs to renovate the high school. The MSBA has historically chosen to invest the State's funds responsibly, after thorough investigation of the facility's needs. The MSBA puts a strong emphasis on school buildings meeting the educational needs of the community. Replacements of the roof, lockers, and mechanical systems will improve the physical plant but will not improve the educational quality of the school.

The goals of this report are two-fold: first, is to establish the educational space conditions and needs of the aging facility; and second, is to inform the completion of the Statement of Interest (SOI) to be submitted to MSBA for consideration to participate in the State's funding assistance program. Through the use of diagrams, first-person stories, and the high school's most recent NEASC (New England Association of Schools and Colleges) report, this report will show how the spaces and configuration of the existing school building are an impediment to effective teaching and learning. It is agreed by all that the systems and finishes are beyond their useful lives and require upgrades, but we will show that it is more than just these that need to be fixed. Ultimately, a feasibility study will be required to identify the building and educational needs, as well as the possible solutions to fulfill these needs so that Arlington High School can proudly serve its community for the coming decades.

2- Arlington High School Use and Condition

The high school is nearly 400,000 gross square feet, much larger than the MSBA guidelines would suggest it needs to be, but there are extenuating circumstances that make significant portions of the space unusable by the high school program. The complex comprises multiple buildings of different generations, added onto over the years to accommodate student enrollment and programmatic needs. The buildings include Fusco House (1914),

Collomb House (1937), and Downs House (1960s). Due in part to its size and mostly due to its configuration a higher-than typical portion of the space is taken up by circulation, both in corridors and stairwells. There are 5,740 linear feet of corridor circulation and 20 sets of stairs. See Appendix A for the circulation diagram. Not only does this add to the total size of the building, it is one of the main reasons why it is difficult both to supervise students in the building and it is difficult to create a sense of place and community for the students and faculty. The net-to-gross square foot factor is the total (gross) building square feet divided by the usable (net) program square feet. This ratio is an expression of how much of the building is programmatic rooms versus circulation, toilets, and other support spaces. The high school's net-to-gross is approximately 1.77; a typical ratio for new construction is 1.50. A lower ratio indicates a more efficient building layout.

In comparison to the MSBA guidelines, the high school has 33,900 square feet in use for physical education and athletics, the guidelines would plan for 23,900 square feet for this program only. It is possible to obtain financial assistance to renovate the existing spaces, but it would not be possible to reconstruct the same, large, amount of space that is currently at the high school.

There are other programs that occupy the high school beyond those that serve the high school directly. There are town offices, town's facilities and custodial offices, the town's pre-school program, the school district's administrative offices, and the LABBB Collaborative Program. There are areas of the building that are used as storage space for other services and there is an area that has been deemed off-limits to occupants and is used for storage. The building has many underground spaces and therefore there is no opportunity to provide natural light to these areas. All told the approximate square footage usage is as follows:

Town Use	6,800 SF
School/Town Facilities	4,600 SF
Pre-School Program	16,600 SF
School District Use (includes METCO Program)	16,700 SF
LABBB Collaborative Program	9,900 SF
Community/ School Storage	10,300 SF

For a diagram of these spaces, see Appendix B.

The Feasibility Study phase will need to assess these uses in conjunction with the high school and the town space needs in order to identify the best location for them. When the above programs and the extensive circulation square footage are combined, the net remaining area for the high school program is approximately 207,000 usable square feet.

The complex has just one, antiquated elevator and for a school building of this size, it does not provide adequate and equal accessibility, in that it is not convenient for the intended users and it does not provide access to all of the building's floor levels.

A thorough renovation-only of the facility would include (and in part has been identified in the On-site Insight report):

- Mechanical systems replacement
- *Electrical system upgrades including an increase to the quantity of power outlets (need to eliminate the extensive use of extension cords)
- Light fixture replacement
- *Plumbing upgrades and/or replacement, including fully modernized and accessible toilet facilities, and an increase in quantity of locations and fixtures
- *Solve the water infiltration issue
- *Security upgrades
- *Technology upgrades and integration, including wireless service
- *Audio/visual systems upgrades, including new PA system, simulcast ability, telephones throughout the school, sound systems at Auditorium and Gymnasium, and Auditorium/Stage lighting

- Hazardous material abatement
- Roof replacement
- Exterior door replacement and *tie-in to the security alarm system
- Exterior window replacement
- Finishes replacement including:
 - flooring (abate and remove remaining vinyl asbestos tile (VAT), replace all with new)
 - *ceiling treatment (provide with high acoustic and reflectance quality)
 - *wall surfaces (provide durable protection, paint all)
 - fixed casework (*include upgrades to plumbing as appropriate)
 - *teaching surfaces (white-boards and tack-boards)
 - *auditorium seating (replace and provide accessibility)
 - corridor lockers and athletic lockers
 - *athletic locker room upgrades
- *Accessibility upgrades throughout
- Three new elevators

*Note: these are not included in the scope (or they are minimally included) outlined in the On-site Insight report.

This long list is indicative of the age and condition of the facility and not all items are included in the On-site Insight report. Many school systems throughout the Commonwealth have buildings in just such need, but in the case of Arlington High School, where the facility has historic value, community presence, and serves many essential needs, it is imperative that every effort be made not only to “fix” the building but to bring it to a state where it can meet the community’s and the educational needs for the next 50 years. Arlington has the unique opportunity at this time to thoroughly assess the high school’s needs and to put every resource possible into creating a place for 21st century learning from the 20th century school-house.

3- Educational Program and Space Needs

Size and Configuration of School

The high school has been identified as “confusing” by students, faculty, and visitor alike. Even for those that have cause to enter the school on a regular basis, directions are required. The size of the school is generous and therefore has provided opportunities over the years to be useful to meet town space needs, but its size is one of the factors that cause it to be confusing. Furthering the sense of confusion is the configuration; due to the many additions over the years, there are several continuous loop corridors on multiple levels and some portions of the school are one, four, and five levels high. Additionally, there are two floor levels that are half underground, located along the full length of the Massachusetts Avenue façade; this lack of day-light adds to the disorientation.

Should a student have to get from their World Language class on the fifth floor of Fusco over to their Math class at the far end of the Downs Building, they need to all but run (and likely actually run) to reach their next class on time. The length of travel is extensive and at times excessive. Many students pass through the central library space as a cut-through path, which is quite disruptive for those working in the library. It is a given that large buildings will generate longer lengths of travel, but due to the current configuration, there is very little opportunity to restructure the program space layout to create a more condensed circulation path for the student’s school day. For a diagram of the school’s circulation layout, see Appendix A.

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. For a diagram of the program layout, see Appendix C. Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to discuss interdisciplinary teaching plans and the students in their charge.

Due to its size and its configuration, great efforts have been made to create a sense of place in Arlington High School, a sense of community. The building does not lend itself to supporting these efforts. The building is confusing at best and does not engender a whole school spirit.

Quantity and Quality of Educational Spaces

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; Arlington's Science class size, 40% of science classes exceed 23 students with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

As described by one teacher:

The columns create a "challenge." It is because of them that a ceiling-mounted projector cannot be installed and used in her classroom. Therefore she needs to write much more on the white board, having to do and undo information throughout the period. This results in loss of teaching and learning time; she estimates it costs them two to three minutes every class period, this in turn results in 8 - 12 hours per school year.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces, see Appendix C.

The high school is already experiencing overcrowding in the classrooms and it does not have sufficient classrooms for the number of teachers in the building. As the number of teachers is expanded to respond to very large class sizes, it will increasingly be difficult to schedule classes into existing classrooms, some of which are already booked for every period.

Based on a five year weighted average to measure continuity rates from grade to grade, the Arlington Public Schools are anticipating significant space pressure at both the Middle and the High School buildings. Since 2000, the district has grown 24%, from 4,165 to 5,157 students. Much of this growth has been concentrated at the elementary level. Projecting forward in time, using current continuity rates, the High School enrollment of 1,254 is projected to rise to 1,375 in five years, and 1,660 in ten years.

Beyond the sizes, configurations, and quantities of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

The On-site Insight report does not address any of these space issues.

Technology and Other Necessary Features

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").
- Telephones: for security, telephones are required in every teaching space.
- PA system: the current system is outdated, does not access all of the building, creating a safety risk, and is extremely jarring to the occupants.
- Simulcast ability: the ability to broadcast to multiple areas of the building creates wide-reaching opportunities for learning.
- Sinks and eyewash/ shower stations: a sufficient quantity of sinks, appropriately located, is required for sanitary, safety, and project-based learning; operating eyewash/ shower stations are required at all Science classrooms.
- Flexible, movable furnishings: Science classroom furniture is bolted to the floors creating a rigid and often inappropriate classroom layout.
- Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading to shortages in the system.
- Acoustic needs: many spaces are acoustically challenged, causing disruptions and making learning difficult; the Music program spaces do not have appropriate acoustic treatment; the rooms adjacent to the Cafeteria are interrupted by noise; the Language Lab needs appropriate acoustics. Old Hall is a loud, echo-filled, challenging space to occupy, coupled with the noises clearly heard from the space below used for band practice and wrestling practice.
- Auditorium sound and lighting systems: the systems are aged and require replacement.
- Equipment: throughout the various program spaces much of the equipment used by the teaching staff is outdated or does not exist (fume hoods, appliances, etc.)
- Air conditioning: the school is used year-round and air conditioning is essential and, at minimum, the Library, Auditorium, and Administrative areas should have air conditioning.
- Borrowed lights and glazing: part of the confusion of the complex is due to the lack of visual connection between spaces.

The On-site Insight report does not address any of these education-related features.

Adjacencies and Size

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. In most cases the locations of the various departments are quite removed from one another and therefore it "does not encourage collaboration and support." Additionally, there are minimal spaces that allow for teachers (of similar and dissimilar subjects) to meet and collaborate. Even though the intent is for like programs to be grouped together, in several instances, and because of required growth of either or both the program's needs or enrollment, this has not been possible. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally,

the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Small-group rooms and break-out spaces allow for differentiated instruction; currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of spaces for support services such as guidance and special education.

Support services, such as toilet facilities, shared storage rooms and faculty workrooms are few and far between, which has a significant impact in a building of this size. Per the Massachusetts Plumbing Code, the current number of occupants at the high school would require the following toilet facilities, properly distributed per floor: male students = seven toilets plus seven urinals; female students = 20 toilets; adult males = four toilets, adult females = five toilets. Separate toilet facilities are required at the Auditorium equal to five toilets plus five urinals for males and 15 toilets for females. Similarly, separate facilities are required at the Gymnasium equal to seven toilets plus seven urinals for males and 20 toilets for females. Therefore, per the Code, the total fixture count would be: 23 male toilets, 19 male urinals, and 60 female toilets. (This calculation does not include the facilities that are also required at the Nurse, Administration, Pre-School, and Daycare areas.) Currently there are 24 male toilets, 29 male urinals, and 28 female toilets. Based on the current school population, the facility is greatly deficient and this does not include the anticipated increase in enrollment.

Additionally, student services such as guidance, social work, METCO, and administrative oversight, would benefit from an analysis identifying their best locations. In some instances they need to be readily accessible throughout the building while in others, for privacy and comfort, need to be a bit more tucked away.

The location of spaces is not so easily solvable as to just relocate programs; each program has specific spatial requirements (size, features, etc.), and as it is, many of the current spaces are used for multiple programs and do not provide the necessary features, and therefore the whole of the programmatic needs will need to be assessed and addressed in the future Feasibility Study.

The On-site Insight report does not address any of the program adjacency and room size needs.

Program Space Needs

In the above text we have identified existing space deficits, including size, quantity, configuration, obstructions, technology and other necessary features, and location within the school building, what have not been identified are the additional educational spaces required (others desired) to continue to allow Arlington High School to achieve excellent academic results.

Following are the presently known missing and/or inadequate educational spaces, the Feasibility Study process will result in a comprehensive understanding of the needs.

- Science requires: additional classrooms and specifically Biology classrooms
- A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space.
- Culinary Arts requires: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education requires: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- Music requires: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education requires: Health classroom and Dance studio (and desires a Swimming Pool for both the athletics department and for wider community use)

- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

The On-site Insight report does not address any of these additional educational space needs.

4- Security and Safety

The school building as configured today, after a century of additions, renovations, and on-the-fly repurposing of spaces, poses a safety and security challenge. From the principal:

While Arlington High School remains a safe environment that is primarily because of the nature of our student body and the vigilance of administration. The problems created for monitoring access to the building and supervising “attractive nuisance” spaces in the building create a burden on administration and a distraction to many students.

There are greater than 50 exterior doors. This fact alone is a security challenge, but is compounded because none of the doors are tied to a security alarm system, and it is virtually impossible to secure the school building either during or off school hours. It is common knowledge that students can use a rock or whatever is available to prop open doors for their return either later that night or over the weekend. Further, those that wish to do harm could get into the building to do so. There are long stretches of hallway without occupied spaces and therefore without supervision. There are 20 stairwells, the majority of which are rarely used, that are known hang-out/hiding place for students. Even in stairs that are used regularly, students can hang-out at the very top or very bottom without detection. See safety/security issues diagram in Appendix D.

Currently it is a challenge to have a timely and efficient lockdown or shelter in place of the school.

Due to the configuration of the school complex, there are no orientation mechanisms and it is easy to become lost and disoriented; it is sometimes a challenge to find the best egress path and in an emergency this could be dangerous. There are many, seemingly, dead-end hallways. Although there are no actual dead ends, many hallways seem as if they are, and pose a danger in an emergency.

In addition to there being too few toilet rooms with too few fixtures for the population, the majority of them are located at the very end of hallways, sometimes beyond the paired hall doors and within the stair well. These are not regularly supervised and pose numerous threats and at the very least, maximize insecurities. We understand that due to the physical, deteriorating conditions as well as the isolated locations of the toilet facilities, that there are students who will not use the facilities throughout the entire school day. This is not a healthy situation.

There are too many isolated, unsecure areas at Arlington High School.

Within the classrooms there are dangers and security risks as well. All of the classrooms that have been identified to have poor sightlines between teacher and student (because of columns or irregular shaped rooms) pose a risk. The Library, which is irregular in shape, has multiple columns, and multiple entry and egress points; there is simply no way for adults to monitor the entire space. This is also true for the Cafeteria. The Cafeteria forms a large “U” shape and is obstructed in the middle. The bottom of the “U” has open archways that provide unobstructed access to and from the rest of the building.

During lunch periods, monitors have to be stationed to see as much of the space at once as is possible. Additionally, while the Cafeteria is centrally located within the school, it is on a floor level that, beyond the lunch

periods, has low traffic patterns with no staff adjacent, and students can linger undetected unless staff are assigned to sweep through and supervise.

Without classroom telephones, there is “no room-to-room communication.” Due to the lack of a fully integrated public address system, the ability to communicate an emergency situation to the entire school is poor. Similarly, and as it was designed, there are three separate fire alarm systems for the three “separate” buildings (they are deemed separate per the construction of fire separation walls), but this means whole areas of the building would not be aware of an emergency in another area of the building. The school administration has had to develop procedures for communicating and activating multiple alarms in an emergency.

Many classrooms teachers have resorted to the use of power extension cords that, by their nature, are strung across the floors. The result is that teachers do not use technology as readily and tripping is a hazard to students and equipment. The Science classrooms use equipment and chemicals in crowded conditions, many in rooms without proper safety stations. Ultimately, students are denied the learning experience if the conditions are deemed too unsafe. Gas shut-offs for some science labs are located in the adjoining rooms, making this safety measure less effective. Accident rates in science labs have been directly associated to both crowding and class size. However, without additional and larger labs, Arlington High School is unable to reduce the class sizes further.

None of the items identified in this section of the report would be remedied if only the On-site Insight report’s level of maintenance work were to be done.

5- The Future

Arlington High School was constructed for a different time in education than what is expected today, let alone what will be required into the foreseeable future. 21st century schools are all about technology, interconnectedness, collaboration, interaction, hands-on learning and making, experiences, teamwork, and interpersonal skills. The excellent teaching staff at the high school knows this and accomplishes much within the constraints of the antiquated facility. It is time to look to the future and to make every effort to create an environment that supports the dynamic teaching and at Arlington High School.

School buildings need clear way-finding and be navigable by all, student and visitor alike. Schools need to have spaces in a variety of sizes that are adjacent to one another to provide appropriate space for differentiated learning styles. The spaces need to be flexible in terms of variety of sizes, and a level of consistency among the amenities. The teaching spaces need to be supported by today’s teaching tools, such as ceiling projectors, wireless, and the like. Schools must achieve these goals in an environment that is at the same time, inviting, open, secure, and supervised.

When thinking of any building today, but perhaps most especially buildings used for educating students, we need to be planning sustainably, using our existing resources wisely, and thinking even further into the future about what else may need to be accommodated on the high school site. Designing sustainably means with the outdoor, as well as the indoor, environment in mind, while creating a long-lasting, low-maintenance, well-planned facility to accommodate flexibility and growth.

Schools need to be safe and secure havens for all that enter. Simple things like signage, color, exposure to natural light, connection through views to nature and the surroundings, combine to create a secure, understandable environment in which today’s and tomorrow’s student learn and grow. These are possible to achieve within a thorough, thoughtful renovation, but they need to be planned for and supported by the community’s resources in order for the high school to best support the youth of Arlington into the coming decades.

6- Third Party Validation of Needs

The New England Association of Schools and Colleges (NEASC) has placed Arlington High School on “warning” status for its accreditation. NEASC cites the following concerns:

- “Poor condition of the facility limits staff’s ability to implement curriculum”
- “Insufficient number, size and layout of classrooms”
- “Insufficient size and poor design of science labs”
- “Crowding in science labs creating hazardous conditions”
- “Need for increased availability of a full range of technology”
- “Closure of a classroom due to environmental concerns”

The full report is available to the public for review.

The Department of Elementary and Secondary Education (DESE) is requiring particular data collection format and submission methods from the district and Arlington is unable to meet the requirements due to the high school’s inability to incorporate infrastructure and technology upgrades throughout the school. This inability is due to the physical construction of the existing school, the walls are mainly of concrete block and in many locations it has been difficult and costly to upgrade the infrastructure.

7- SOI and Funding

This report along with information from the high school faculty and staff, the school district administration, the Town’s facilities manager, the On-site Insight report, the NEASC report, and other material will be used to respond to the MSBA Statement of Interest (SOI) thoroughly. The SOI will address the following aspects of the facility’s needs:

- “elimination of existing overcrowding”
- “prevention of loss of accreditation”
- “prevention of future overcrowding”
- “replacement or renovation of systems to increase energy conservation”
- “replacement of, or addition to, obsolete buildings to provide a full range of programs”

SOI Summary

The following issues are of major concern for Arlington High School:

- Major heating, ventilation, electrical, fire detection, and plumbing systems need to be replaced
- All other building systems are antiquated and energy inefficient
- No air conditioning and therefore unable to accommodate summer programs
- Hazardous material abatement
- Proper exterior wall insulation
- Toilet room quantity, locations, and condition are inadequate; fixtures are antiquated
- Poorly functioning drinking fountains
- Electrical system is not adequate to support the technology needs
- Windows are single-pane, energy inefficient with clouded glazing and poor operability
- Minimal access for the physically handicapped; only one elevator that does not reach one of the floor levels and is in need of replacement; one elevator is not adequate for this size facility
- Poor roof condition
- Worn flooring throughout
- Inadequate Science facilities
- The Library is irregular shaped with many obstructions making it a difficult space to supervise

- Undersized Instrumental Music Room that is acoustically inadequate
- Cafeteria is at capacity now, the projected increase in enrollment will require and increase to four lunch periods
- Antiquated PA system that does not reach everywhere
- No telephones for teacher use in an emergency
- Most existing conditions do not meet the Massachusetts Architectural Access Board requirements, such as stair risers, hand- and guardrails, hardware, plumbing fixtures, casework, Auditorium seating, etc.
- Current overcrowding
- Future expected overcrowding

Funding

Ultimately a Feasibility Study will need to be completed to fully understand the construction costs and project costs for the scope of work that is required to renovate Arlington High School and improve the educational spaces and overall environment of the facility. Prior to the Feasibility Study phase and working with MSBA, the Town of Arlington will need to establish an approximate scope and budget within which to plan for the pending project costs. The actual costs will not be finalized until after Feasibility Study and Schematic Design phases are complete and the Town signs its Project Funding Agreement with MSBA, at which time the Town will know its exact share of the costs.

In an effort to put rough cost numbers to the level of work outlined above, we offer comparison statistics:

A review of MSBA past high school renovation and addition project construction costs reveal the average cost per square foot for construction-only, excluding the extreme high and low end projects, is \$198. (Please note: we do not have detailed knowledge of the extent of the work completed for these projects.) To this, add a rough mark-up of 20% for soft costs (all the costs required that are not part of the actual construction), the average project cost is \$238 per square foot. The MSBA projects were bid between 2009 and 2013. Assuming the mean year was 2011 and if the Arlington High School were to bid mid-year 2016 and using an average yearly escalation factor of 3%, the project cost is \$276 per square foot. Based on the size of the existing school, the project cost would be approximately \$100M.

As a second check, we compared the recently completed Cambridge Rindge and Latin School, a renovation of a similar size high school. The scope of work included many similar items to those needed in Arlington, but with minimal reconfiguration of spaces. The project was completed in 2011 with \$238 cost per square foot. Assuming Arlington High School project would be complete by 2018, and adding the yearly escalation to the project cost, the cost per square foot would \$293. Based on the size of the existing school, the project cost would be approximately \$110M.

There are many factors that are unknown at this early stage. Project costs could range from \$90M to \$130M, or even higher. Until the true investigative work is completed in the Feasibility Study process, we will not know the exact scope and therefore the exact costs. But what we can ascertain from the information on the MSBA website and the information in this Analysis report is that the work required to restore Arlington High School to take on the challenge of 21st century learning within a facility that meets today's requirements, operates efficiently, and is a welcoming, safe environment, will surely be greater than \$32.4M.

If Arlington's reimbursement factor of approximately 52% were to be applied to a \$130M project cost, the Town's share would be approximately \$62,400,000. While this is a substantial sum, it would encompass all of the foreseeable needs of the high school facility. The alternative is to spend the sum (it too is a substantial sum) proposed in the On-site Insight report but achieve very little.

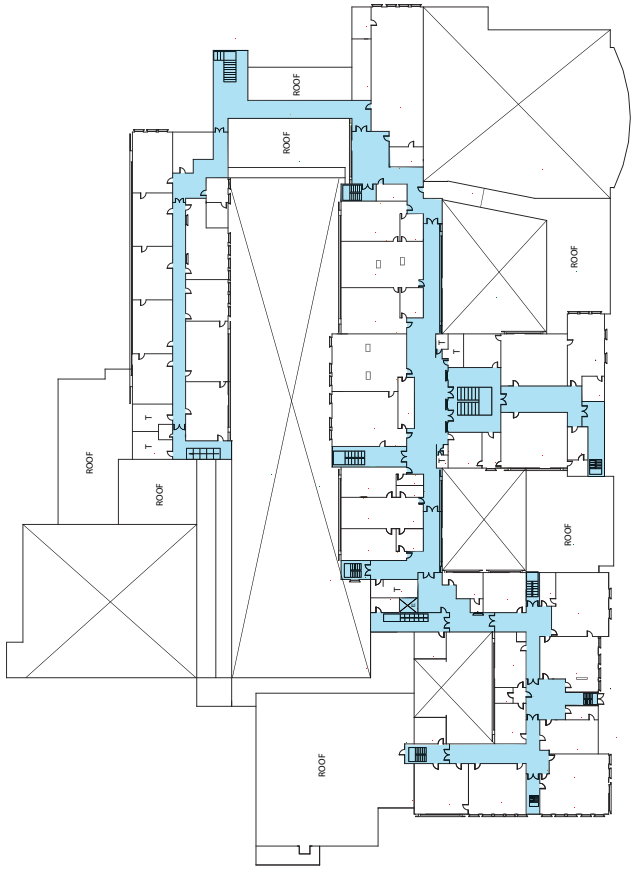
8- Conclusion

In conclusion, beyond the physical deterioration and aged condition, the school is inadequate to meet the current and future educational needs. Meeting accessibility and other standard code requirements are essential upgrades that are not fully covered in the maintenance assessment by On-site Insight. Physical constraints of size, location, and amenities continue to create barriers to teaching and learning. Safety concerns due to the school's layout and configuration are of mounting concern.

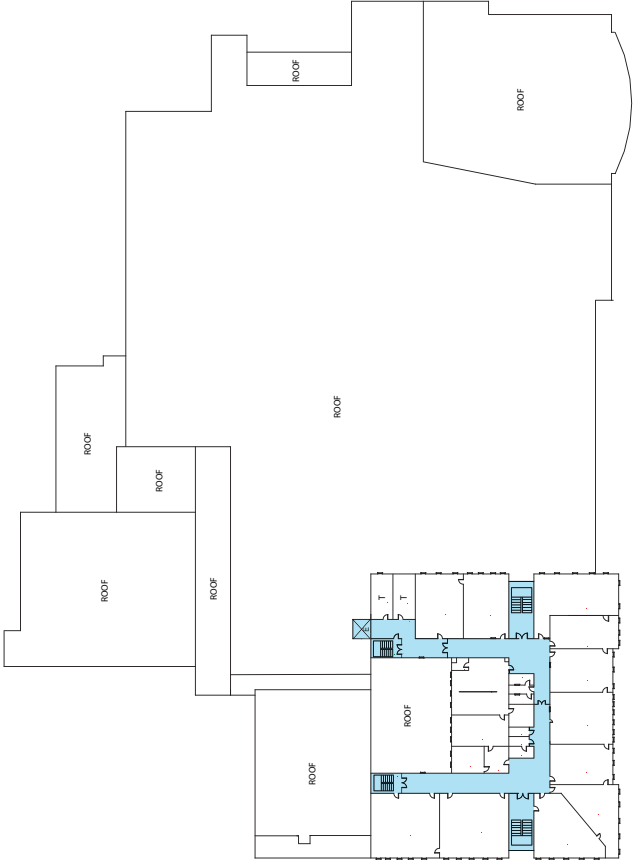
The teaching and learning environments are restricted by overcrowding, inappropriate number and/or sizes of rooms required for the particular task; and rooms of irregular shapes and interrupted by columns that create obstructed views, inhibit learning and cause safety concerns. Science rooms are inadequate size creating cramped conditions, and feature obstructed views that cause an unsafe environment. The general sprawl of the multi-generational, multi-level complex creates confusion, discomfort, safety and security concerns.

The school Principal simply stated, the school has "inadequate instructional spaces," is in need of improved and expanded specialty spaces, has "technology challenges," "impedes innovative, teaming, or collaborative teaching," and is "unsupervisable." He notes that the current quality of programming is due, in large part to the excellent instructional staff. As the economy improves and surrounding communities restore the quality of their facilities and equivalent, Arlington High School will need to restore its school in order to attract and keep its first-class faculty and programs.

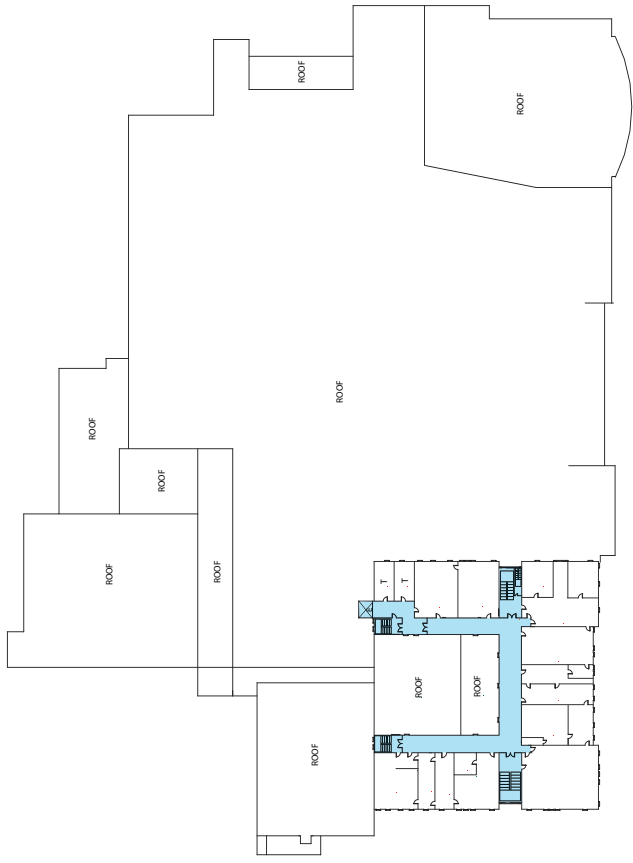
The Town of Arlington has the opportunity now to make the substantive improvements to the facility and its educational spaces to appropriately accommodate future generations of learners.



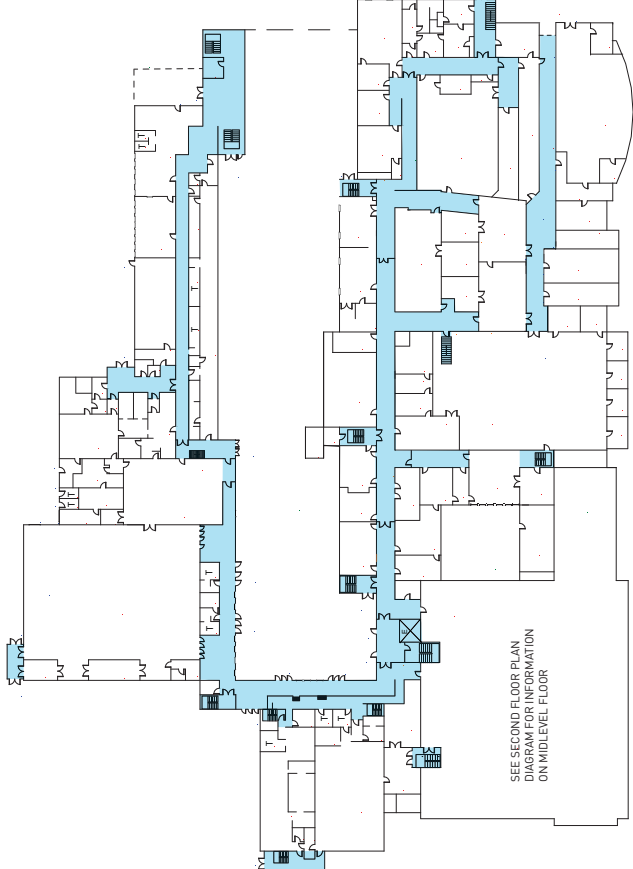
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FIFTH FLOOR



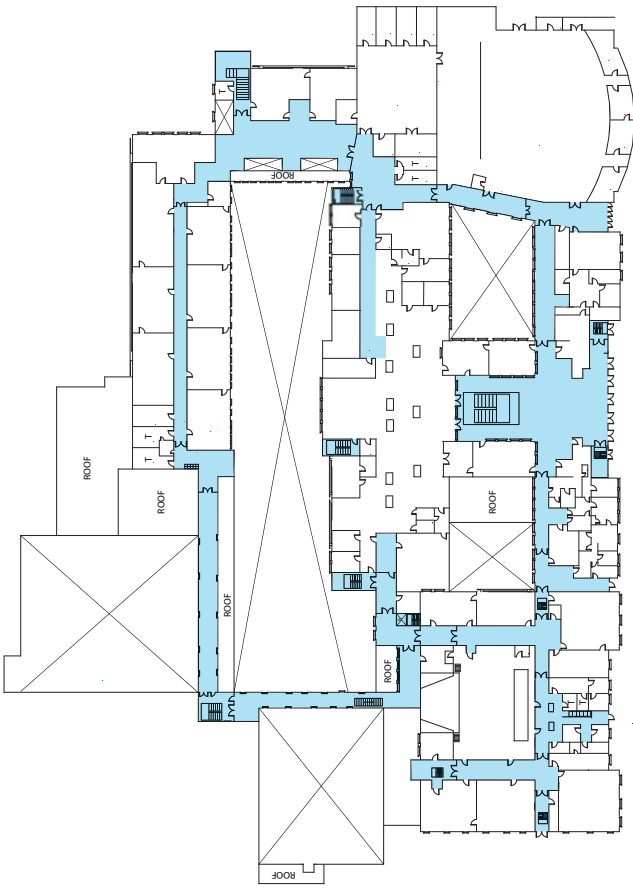
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FIRST FLOOR



SECOND FLOOR



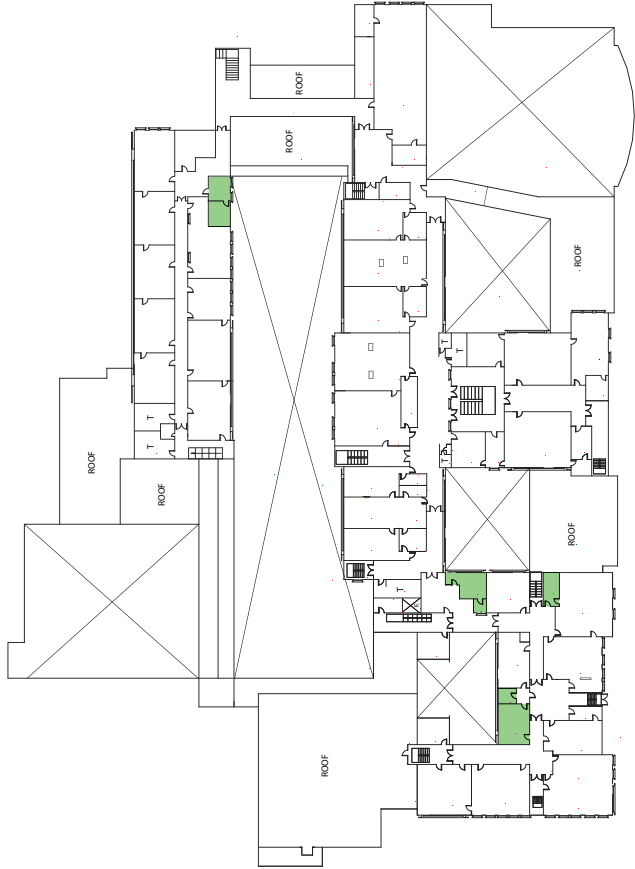
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Appendix A - Circulation

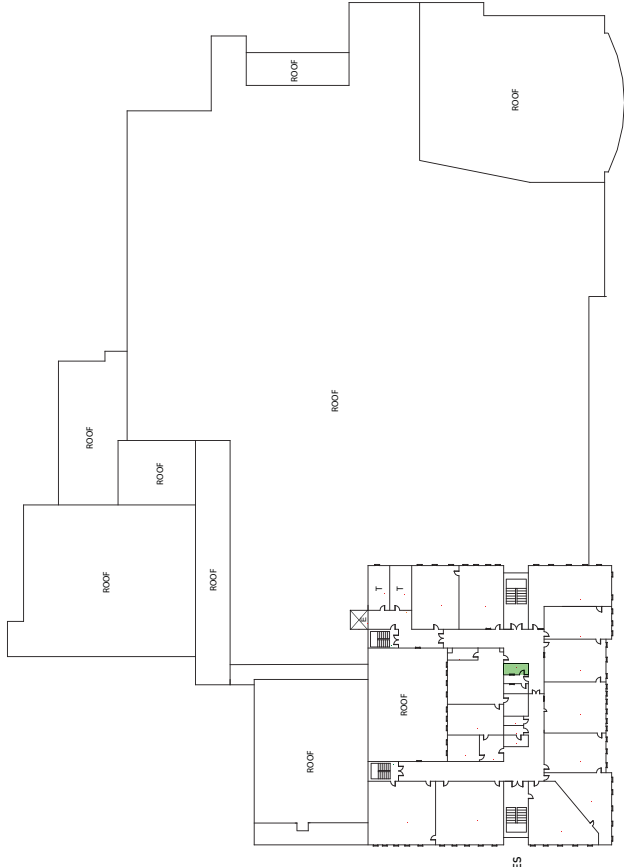
Arlington High School
Arlington, MA



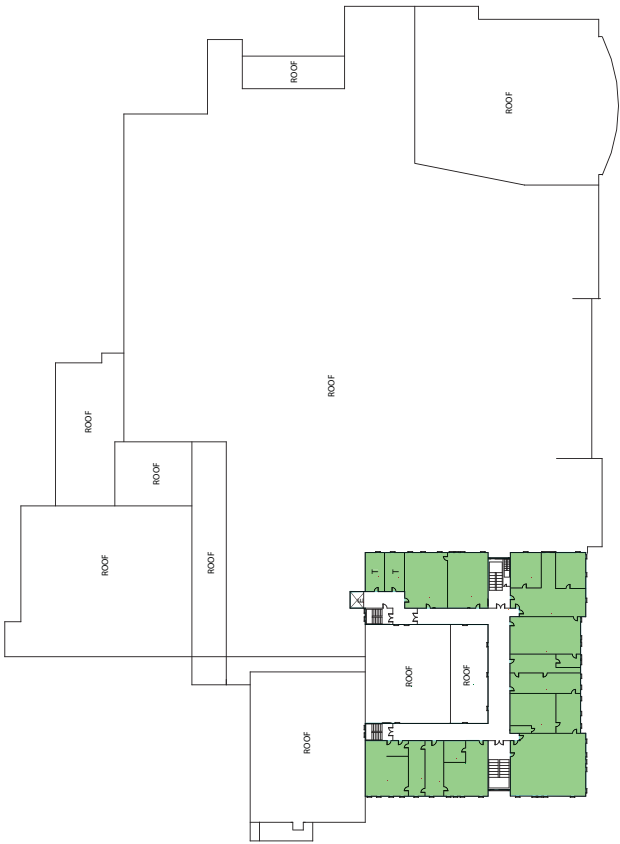
CIRCULATION



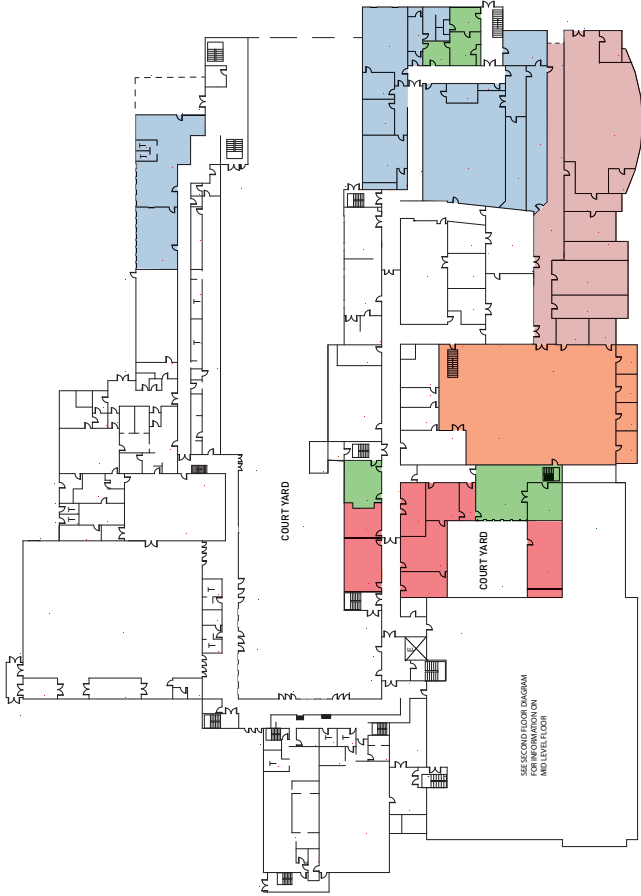
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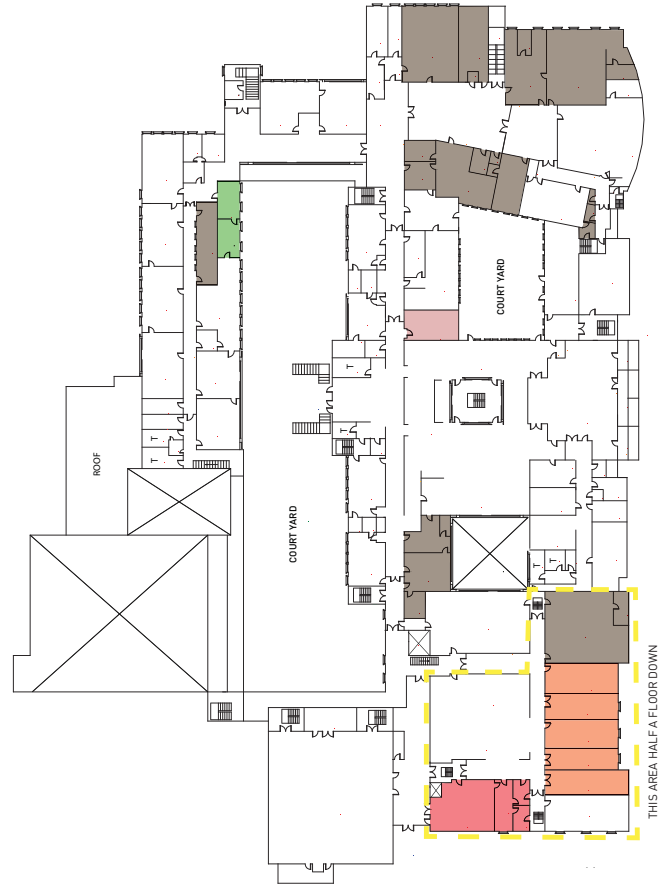
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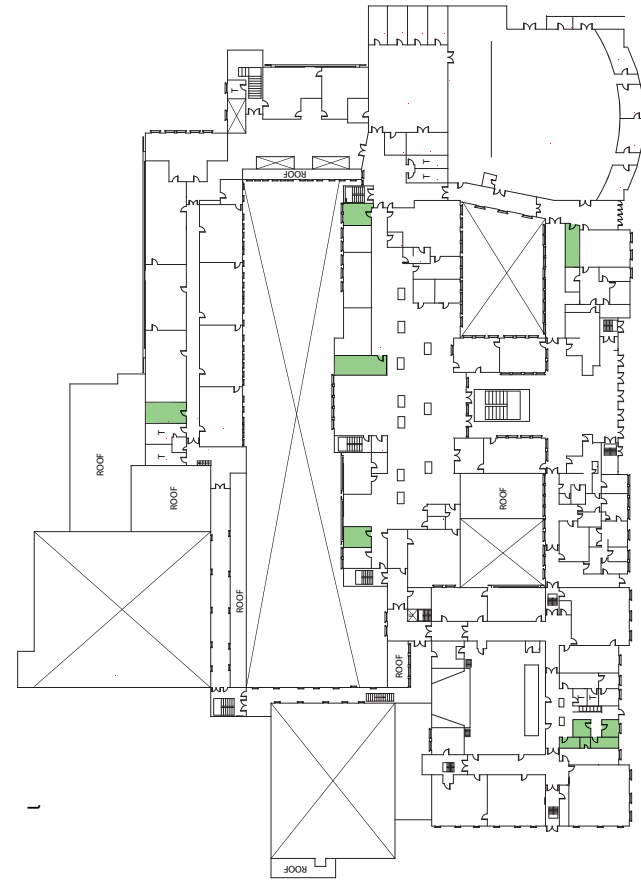
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FIRST FLOOR



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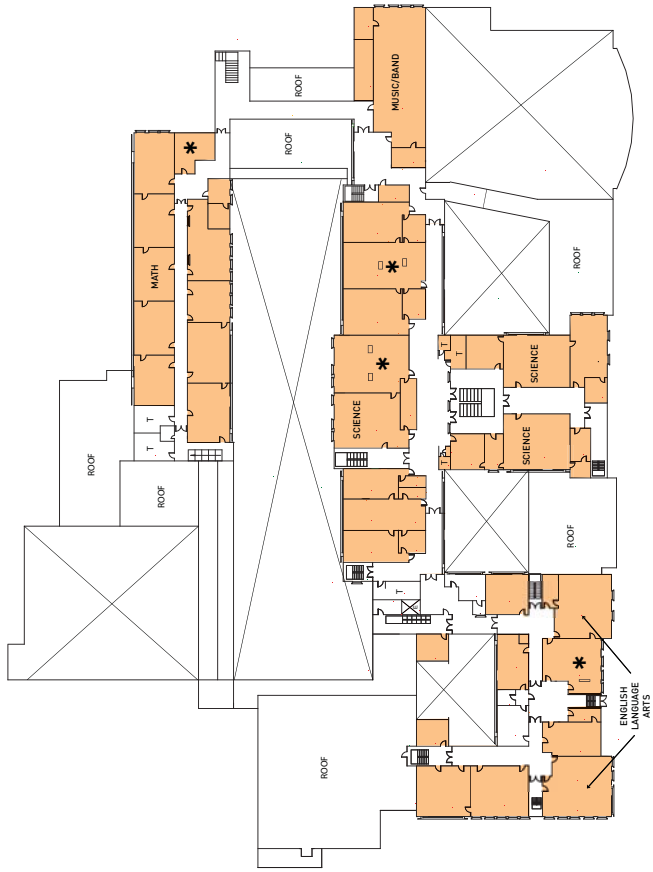
THIRD FLOOR

- TOWN USE
- SCHOOL / TOWN FACILITIES
- SCHOOL DISTRICT USE
- PRE-SCHOOL USE
- COMMUNITY / SCHOOL STORAGE
- LABBB COLLABRATIVE

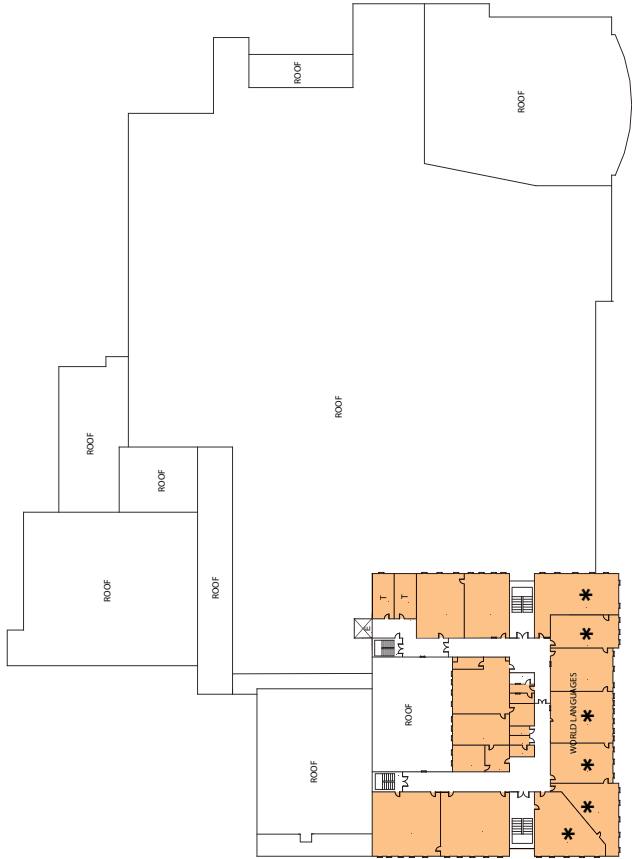


Appendix B - Non HS Space Use

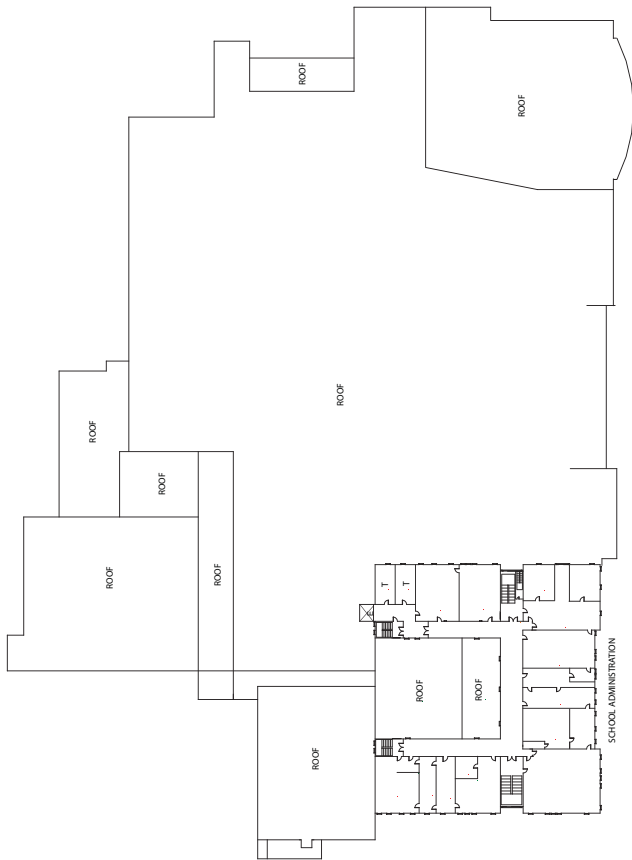
Arlington High School
Arlington, MA



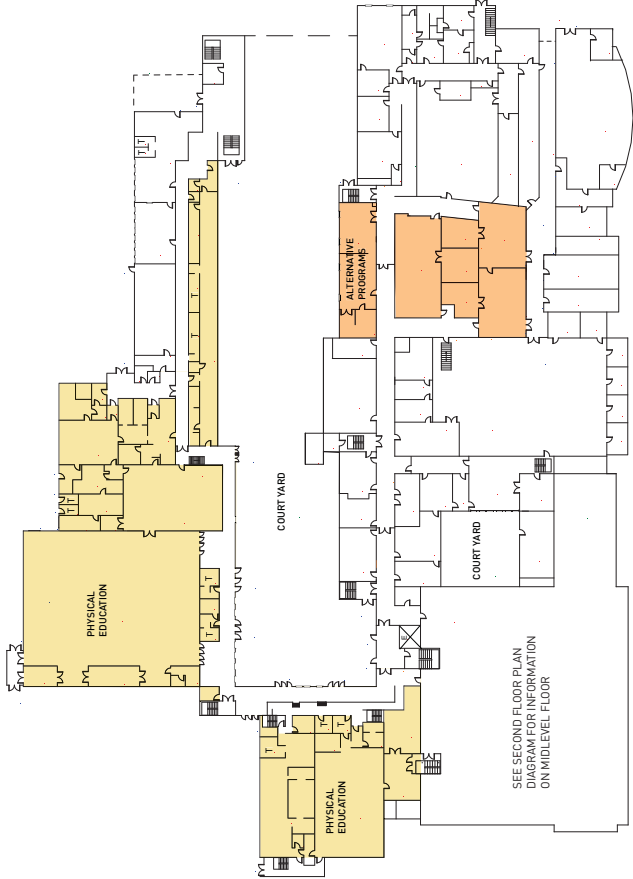
FOURTH FLOOR



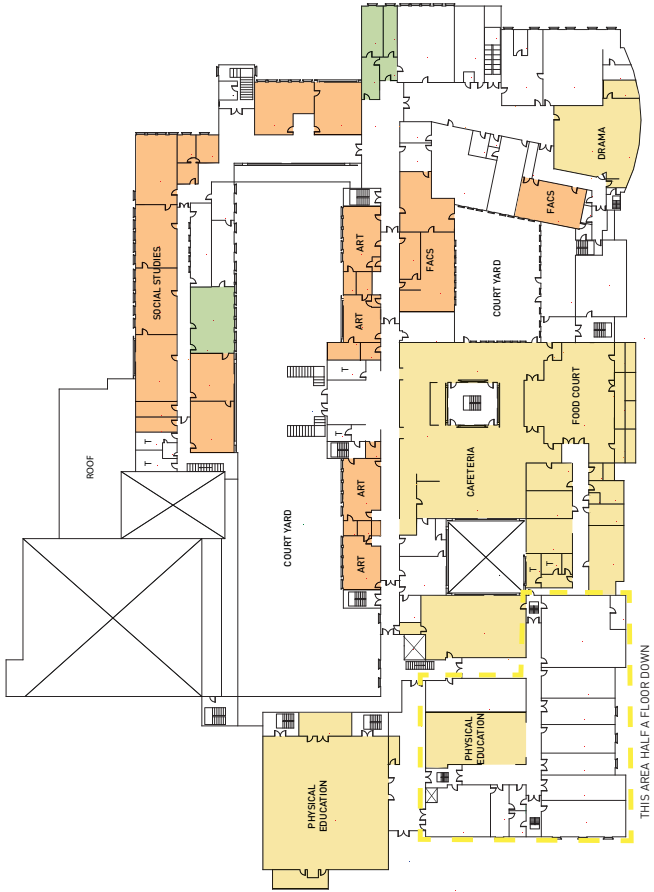
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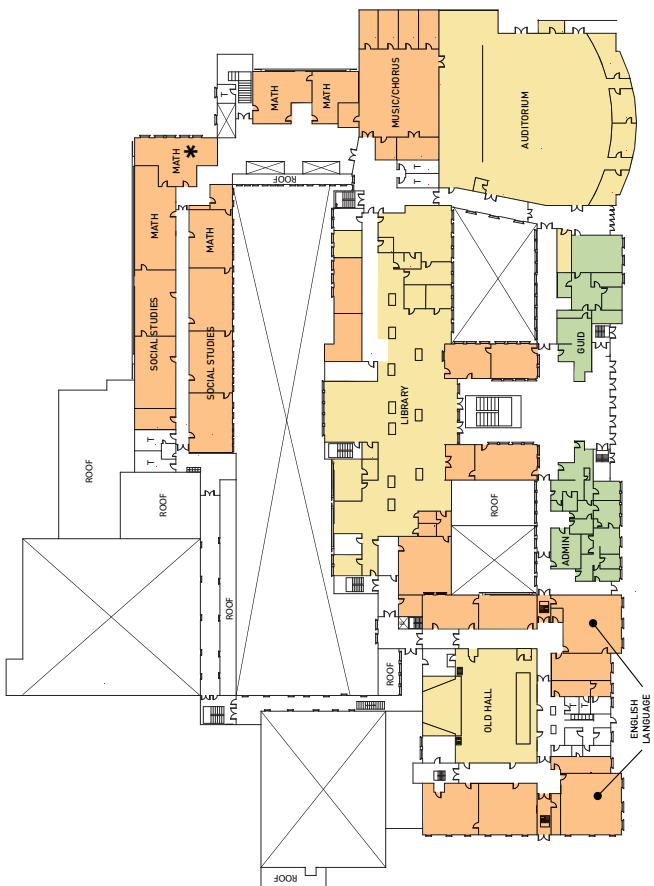
SIXTH FLOOR



FIRST FLOOR



SECOND FLOOR



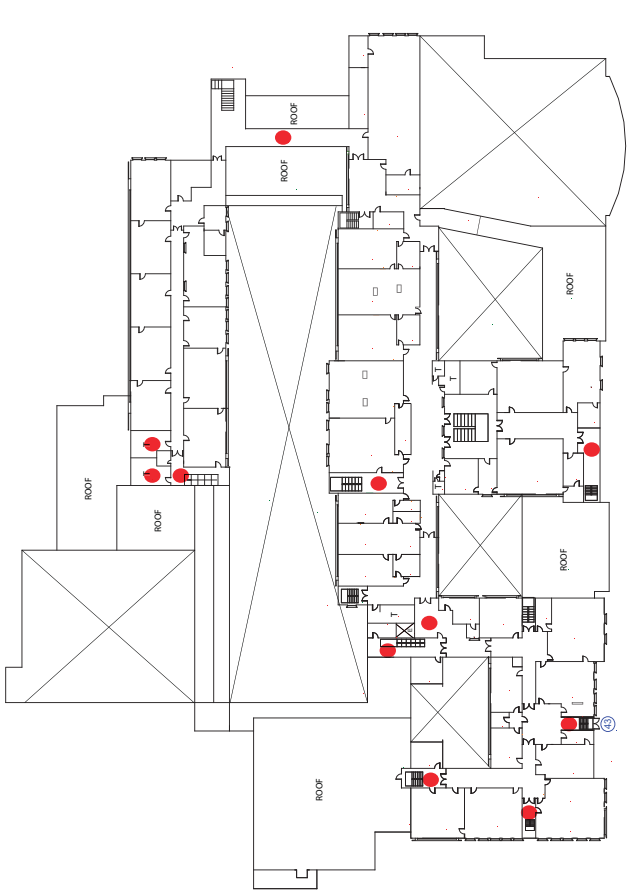
THIRD FLOOR

- ACADEMIC SPACES
- SHARED SPACES
- SUPPORT SPACES
- OBSTRUCTED VIEWS / IRREGULAR SPACE

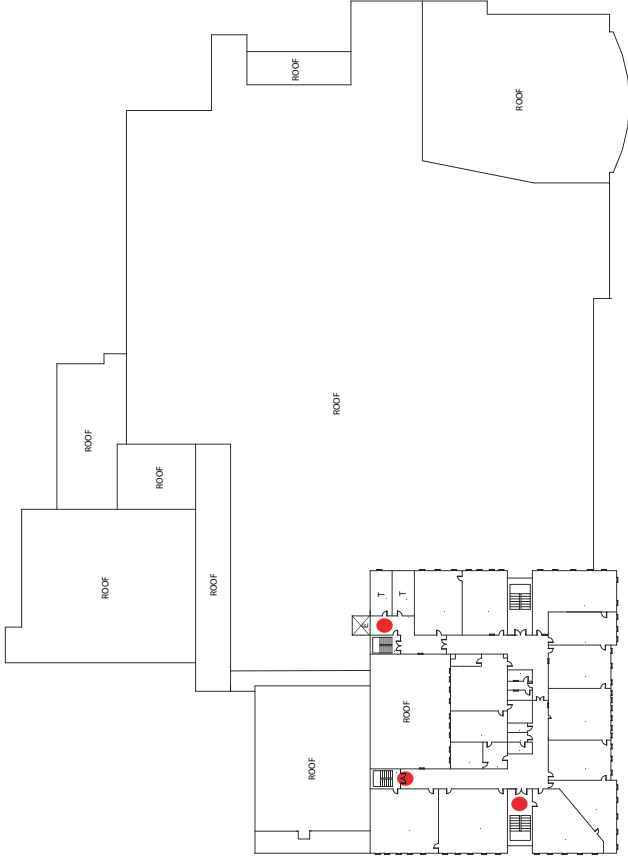


Appendix C - HS Program Spaces

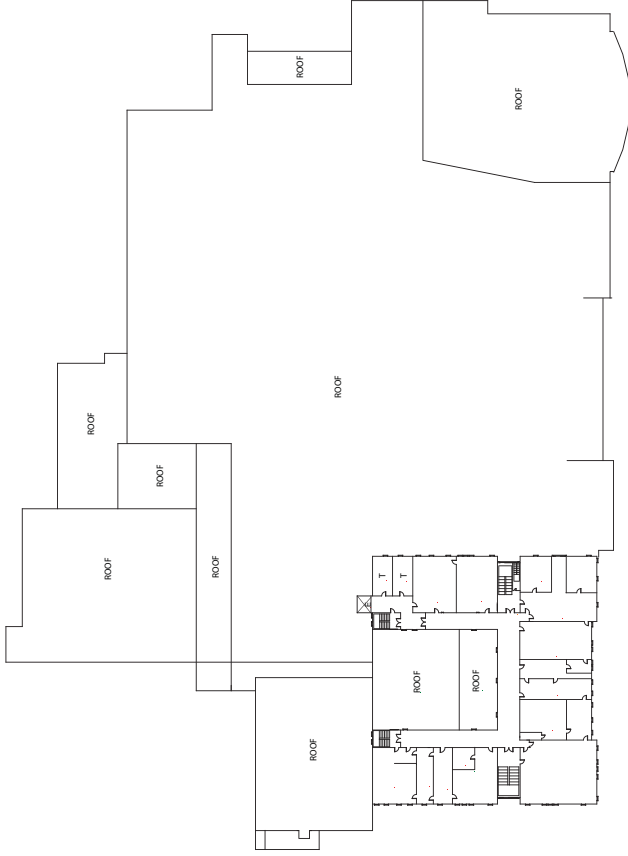
Arlington High School
Arlington, MA



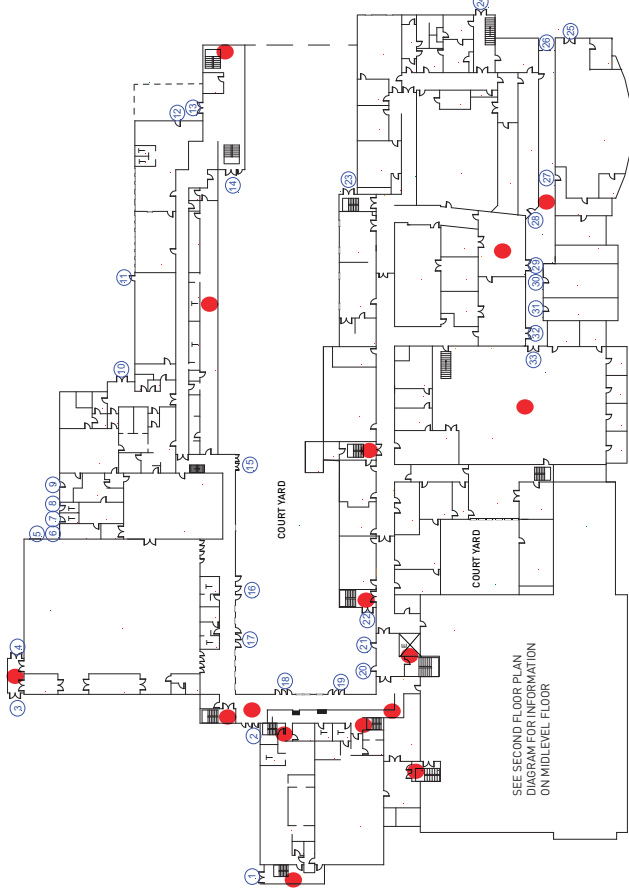
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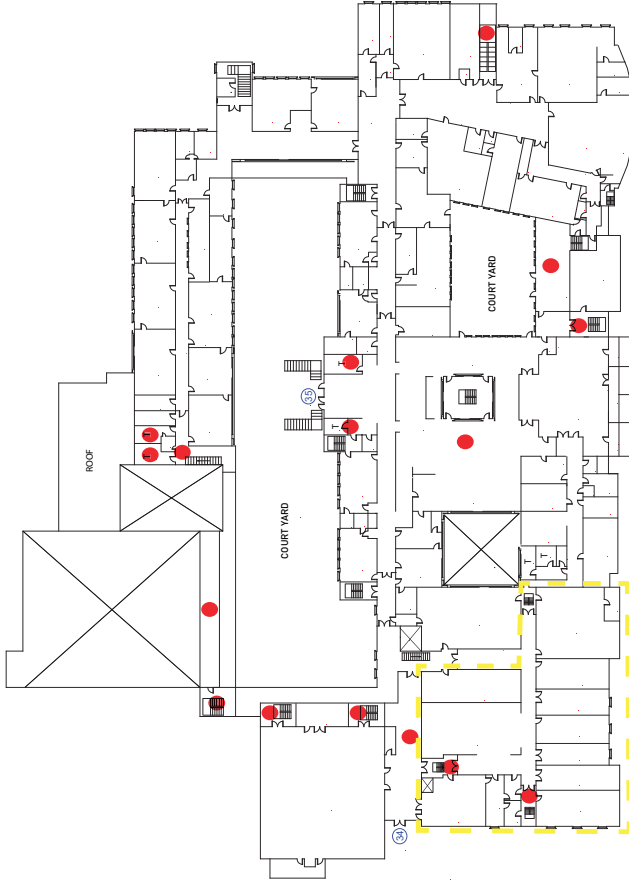
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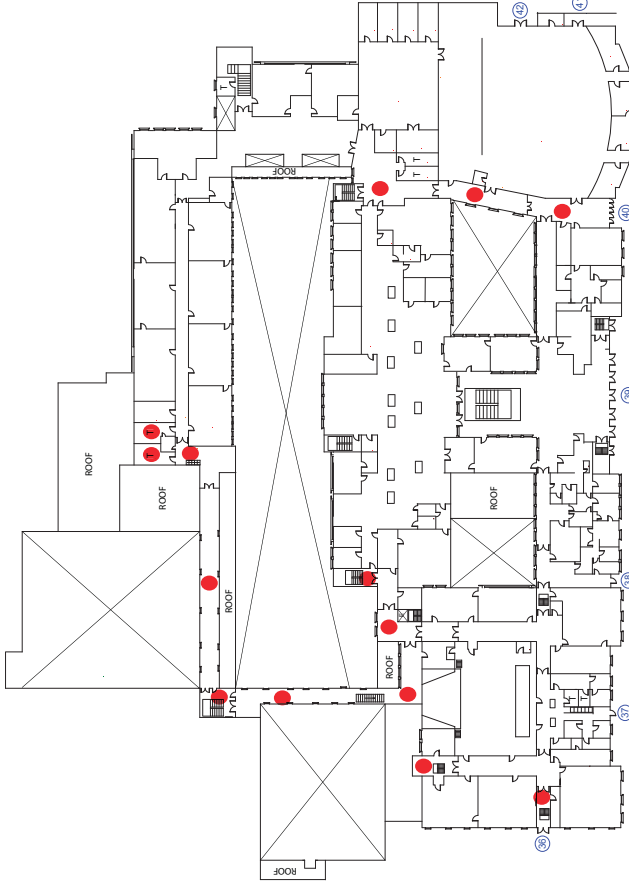
SIXTH FLOOR



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR

Appendix D - Safety and Security Issues

Arlington High School
Arlington, MA



- 1 EXTERIOR ACCESS POINTS
- UNSUPERVISABLE AREAS

Green Capital Needs Assessment and Replacement Reserve Analysis

Prepared for:

The Town of Arlington School Department
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Arlington, MA



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Arlington High School
Arlington, MA

August 18, 2013

Preliminary Report

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HOW TO READ THIS REPORT

The report is divided into two sections: "Findings and Recommendations" and "Supporting Data".

Findings and Recommendations: The three elements comprising this section constitute the main content of the report. A comprehensive list of the recommended green options and their benefits, and a snapshot of key energy findings, are included in the Executive Summary. Additional detail regarding the property's existing conditions, current and future capital needs, and green recommendations are illustrated in the narrative and photo pages.

Supporting Data: These nine sections contain the support data and calculations used in determining the feasibility of the green recommendations. Hard costs estimates and replacement/repair timing are presented in the capital needs worksheets. The Capital Needs Summaries and Replacement Reserve Analyses highlight the total 20-year capital costs for both the conventional and green scenarios pitted against current funding circumstances. Cost-benefit analyses are included in the Simple Payback and Life Cycle Cost "cut sheets" at the end of the report.

Executive Summary

Overview and Goals

This Green Capital Needs Assessment (GCNA) has been undertaken on behalf of The Town of Arlington School Department. It is aimed at determining the development's current and prospective physical circumstances, on both a traditional and green basis. A traditional CNA focuses on those capital activities that reasonably can be expected to ensure that a property is viable and in good condition over a twenty-year horizon. In a traditional CNA, it is common for On-Site Insight (OSI) to informally comment on maintenance practices, or suggest discretionary upgrades that might affect operations, marketability, or occupant well being. This GCNA is aimed at more rigorously and more formally identifying green alternatives to conventional replacement of major components and systems. It offers options aimed at helping:

- improve energy and water efficiency,
- reduce operating and capital costs through the use of durable materials and improved maintenance,
- safeguard indoor environmental quality (IEQ) for residents, and
- reduce the property's environmental impact.

We see a number of sensible green opportunities, now and in the future, to replace existing elements with more durable and/or environmentally friendly materials and technology. In both the narrative and detailed capital needs worksheets that follow, conventional and green capital activities are presented in parallel. Capital needs summaries are presented separately for conventional and green models. The green opportunities described in the plan fall into one of two categories: energy and water conservation measures (EWCs), or green measures (GMs), expanded in detail below:

Executive Summary

Energy and Water Conservation Measures (EWCMs):

In the report, 13 energy and water conservation measures (EWCMs) are identified. Energy and water conservation measures are upgrades and improvements to existing mechanical and electrical systems that have a direct impact on energy consumption, and therefore potential utility (electric, gas, oil, water, sewer) savings if implemented appropriately. As part of the inspection process, the property's utility data was analyzed. This information is then used as part of the EWCM recommendation and calculation process.

Certain EWCMs are interactive. In order to achieve the projected annual energy savings for an interactive group, the EWCMs must be implemented in concert with one another. If any of the interactive EWCMs are deferred or foregone, there may be a significant impact on the utility savings outlook. For example, replacement of an inefficient boiler system may not achieve projected utility savings associated with that system if inefficient windows remain in place.

The energy conservation measure specifications (i.e. boiler efficiencies, R-values, U-values) presented in this plan are mostly derived from the International Energy Code and the American Society of Heating, Refrigeration and Air-Conditioning (ASHRAE) Handbook. These measures represent one conceptual option; various alternatives may yield different results. It must be noted that a number of factors may affect the estimated annual energy savings and simple payback periods, and therefore the figures outlined in this report are not guaranteed.

Due to the towns practice of combining overall water usage and costs, Arlington High School's specific water consumption could not be calculated and therefore water saving options could not be analyzed. It is suggested that wherever low-flow and water saving devices are installed the school and the Town will see significant reductions in water consumption.

Executive Summary

Green Measures (GMs):

The report identifies 3 Green Measures (GMs). Green measures are replacements of existing materials and systems that do not have a direct impact on energy consumption; however, they represent opportunities to reduce capital and operational expenditures in the future due to increased durability, enhanced performance, and increased expected useful life (EUL) potential. Additionally, if implemented properly, GMs can improve indoor environmental quality and can benefit resident and staff health, safety, and well-being.

The life cycle costs for the GMs are calculated in the attached worksheets with the comparative life cycle cost for the conventional replacement alternatives. Other GMs included in the plan do not represent enhanced performance or extended expected useful lives, and therefore the life cycle costs for these GMs are not calculated. Many of the projected savings are based on certain performance and EUL criteria for the respective systems and materials. Several factors may impede upon the expected performance and may skew the estimated savings. In this case, the savings presented in the plan are estimated and cannot be guaranteed.

Building Modeling Methodology

This report uses an energy model created in TREAT to determine the energy loads (electric and fossil fuel uses including heating, domestic hot water, and non-heating systems) for this property. The TREAT model is based on building-specific construction, HVAC systems, and other building systems (i.e. lighting, appliances, etc.) as identified by the inspection team. The energy model also incorporates 12 months of utility bills, and matches weather data to the utility billing period.

Using the SUNREL™ energy simulation software developed by the National Renewable Energy Laboratory (NREL), TREAT calculates energy uses on an hourly basis (again factoring in weather/climate, existing HVAC systems, and internal gains) for an entire year. The result produces calculated energy use for the property, and proposed energy savings for identified measures. The energy savings are shown both independently and with full interaction of all measures.

Executive Summary

Additional measures such as water usage, which is currently not modeled in TREAT, have been presented using OSI's existing utility models. Also, since TREAT evaluates the building as a whole, it is possible that measures reduce electric consumption, could also show an increase in heating requirements (i.e. lighting reduction reduces heat typically produced by the original lighting system and in turn would require an increase to the heating load). The calculated loads (electricity, natural gas) are reconciled against billed utility loads within a 10% margin.

A Note on NPV

Net present value (NPV) is the difference in total life cycle costs between the conventional recommendation and the green recommendation. The EWCMs and GMs that carry a negative NPV are viewed as cost-prohibitive, despite potential environmental benefits or additional energy savings. In this report, OSI does not recommend measures that carry a negative NPV.

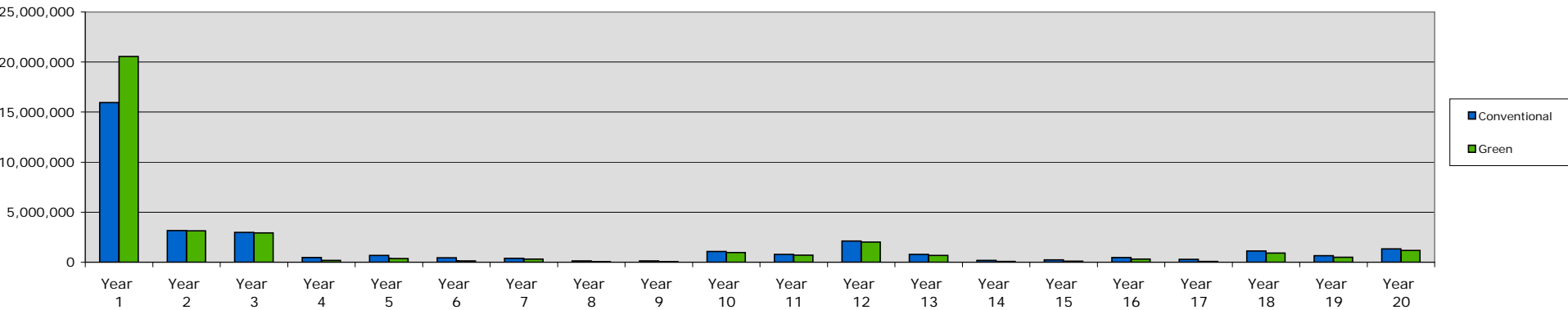
Executive Summary

Dashboard

Property Data

Location:	Arlington, MA
Year Built:	1913
Number of Buildings:	1 (Sections differ in age)

Comparison of Capital Needs - Conventional vs. Green



Environmental Impact

(Total Carbon Release Based on Current Annual Energy Usage)

Building Square Footage:	367,632
Resident Population (estimated):	1,700

	BTUs/yr	Conversion	lbs CO ₂	lbs CO ₂ / Res
Gas	41,474,900,000	x 11.023100	4,571,820	2,689
Oil	0	x 11.023100	0	0
Electricity	5,292,585,216	x 1.582917	2,454,651	1,444
Total	46,767,485,216		7,026,471	4,133

Replacement Reserve Analysis

Conventional

Total Conventional 20-Year costs are \$30,369,828 in uninflated dollars

Green

Total Green 20-Year costs are \$32,905,272 in uninflated dollars

Health and Safety

Hazardous Materials

	Identified	Location / Notes
Lead Based Paint (LBP):	None	Not Tested
Asbestos Containing Materials (ACMs):	None	Not Tested
Mold:	None	Not Tested

Indoor Ventilation

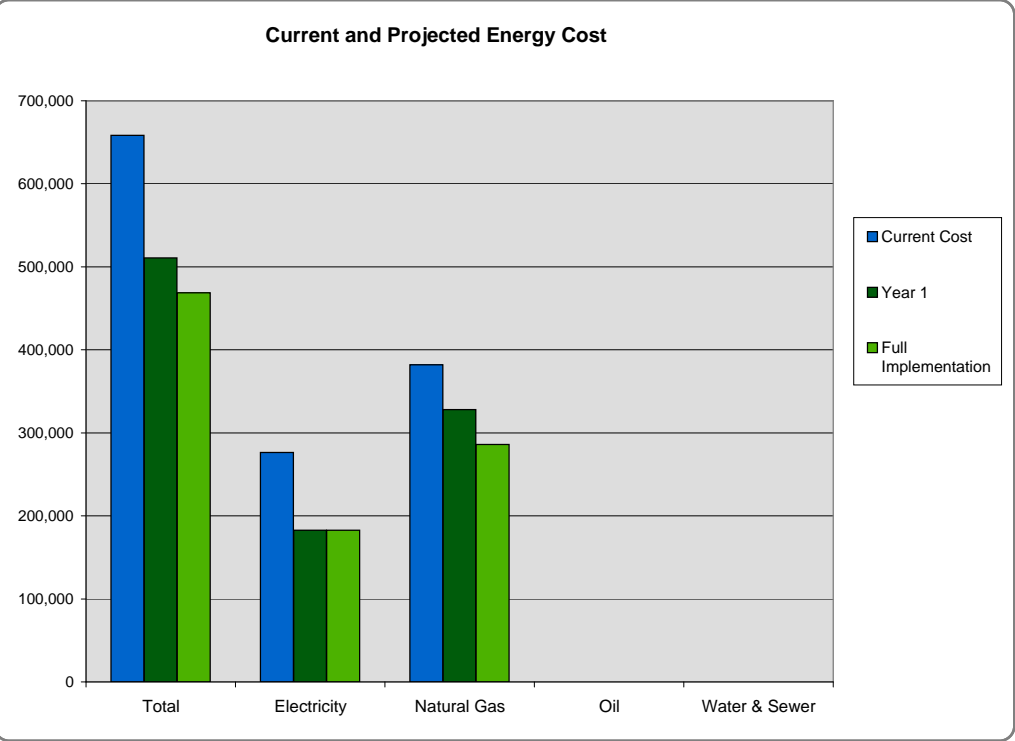
Classroom ventilators, Roof Ventilators

Indoor Air Quality (IAQ)

	Design Specification	Actual Read	Notes
Air Flow Rate	0	0	Not tested
Thermal Comfort	72-76	78	Bidg not in operation
Carbon Monoxide	0	0	Not tested
Carbon Dioxide	<1000	<900	

Executive Summary

Energy Savings



Energy Intensity / Benchmarking Data

TREAT Modeled Data

Building Square Footage: **367,632**

Heating Degree Days: 5,674

TREAT Model

	Amount	Units	BTUs/yr	Energy Intensity (BTUs/(HDDs x SF))
Heating	372,428	therms	37,242,841,273	18
Cooling	0	kWh	0	0
DHW	70,367	therms	7,036,689,801	3
Electricity	1,551,168	kWh	5,292,585,216	3
Total			49,572,116,290	24

	Gallons/yr	Gallons/sf/yr
Water	0	0

Energy Usage Summary

Billing Data

Utility	Current Usage	Current Cost	Projected Usage	Projected Cost	% Savings
Electricity	1,551,168 kWh	\$276,435	1,025,234 kWh	\$182,708	33.9%
Natural Gas	414,749 therms	\$381,889	310,458 therms	\$285,861	25.1%
Oil	0 gallons	\$0	0 gallons	\$0	n/a
Water & Sewer	0 gallons	\$0	0 gallons	\$0	n/a
Total		\$658,324		\$468,569	28.8%

Executive Summary

Green Improvement Plan

						Annual Utility Savings									
Measure	Upfront Cost	EUL	Simple SIR ¹	Incremental Cost ²	Green NPV ⁴	Electric		Gas		Oil		Water & Sewer		Total \$	Recommended Timing
						KWh	\$	Therms	\$	Gallons	\$	Gallons	\$		

Recommended EWCMs (Based on Financial Analysis)

Interactive Group														
EWCM 2 Heating System Upgd	1,126,735	40	0.72	531,735	278,430			22,015	20,271				20,271	Immediate
EWCM 2A Heating System Upgd	1,176,000	40	0.00	421,000	9,357			17,781	16,372					
EWCM 3 Heating Control Upgd	650,000	15	0.50	129,340	13,979			23,519	21,655				21,655	Immediate
EWCM 8 Gym/Locker Ventilators	180,000	50	1.94	90,000	47,006			7,599	6,997				6,997	Immediate
EWCM 9 Roof Makeup Air Units	200,000	20	0.42	50,000	6,014			4,598	4,234				4,234	Immediate
EWCM 12 Windows	2,808,000	35	0.09	257,400	20,750			8,102	7,460				7,460	Immediate
EWCM 13 Interior Lighting	1,000,000	20	1.59	250,000	930,297	452,528	80,645	(1,080)	(995)				79,651	Immediate
Interactive Group Total ⁵	7,140,735			1,729,475			79,523		70,343				149,866	
EWCM 1 Exterior Lighting	51,250	20	3.27	6,250	117,931	47,029	8,381						8,381	Immediate
EWCM 4 Circulation Pumps	31,200	20	1.48	8,360	22,099	12,918	2,302						2,302	Immediate
EWCM 5 DHW Boiler Upgd	31,000	20	16.57	11,000	328,824			27,895	25,685				25,685	Future
EWCM 7 Upgrade Split Syst ACs	13,500	20	0.92	2,000	963	3,494	623						623	Immediate
EWCM 10 Roof Exhaust Fans	58,500	20	0.99	19,500	18,846	16,264	2,898						2,898	Immediate
EWCM Subtotal	7,326,185			1,776,585		79,705	93,727	27,895	96,028	0	0	0	0	189,755

Recommended GMs (Based on Financial Analysis)

GM 1 DHW Storage Tanks	30,000	25		13,534	1,698	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Immediate
GM 2 Upgrade Resilient Flooring	625,261	25		144,291	40,536	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Immediate
GM Subtotal	655,261			157,825		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Total	7,981,446			1,934,410		79,705	93,727	27,895	96,028	0	0	0	0	189,755

Optional Actions

EWCM 6 CI Rm Ventilators	2,250,000	20	0.57	1,000,000	(158,704)	(171,247)	(30,518)	102,206	94,108				63,590	Immediate
EWCM 11 Exterior Doors	238,000	45	0.01	68,000	(54,445)			52	48				48	Immediate
GM 3 Upgrade Carpet	123,030	10	0.00	24,606	(24,606)								0	Immediate

Notes:

1. Simple SIR is calculated as (Total Annual Savings * Estimated Useful Life) / Upfront Cost.
2. Incremental Cost is the difference in cost between the green and conventional alternatives.
3. Green SIR (Savings to Investment Ratio) is a relative measure that reflects the ratio of total savings to total investment of Green vs. Conventional. Unlike Simple SIR, this calculation takes into account maintenance costs, inflation, discounting, and differences in expected useful life.
4. Green NPV is the net present value of installing a green vs. conventional product.
5. Interactive group total recognizes full interaction of all measures based on the TREAT model.

Narrative

Arlington High School, located at 869 Massachusetts Avenue in Arlington, MA, is a sprawling facility that was built in several stages. The original buildings date to 1913-14 and are referred to as the Old Buildings (buildings "A" & "B"). These buildings retain historic details common in that era; specifically a tall clock steeple, columned classical entry façade, and slate roof. The so called Freshman Building was added in the early 1960s. During the 1980s all of the buildings were connected to form a large interior courtyard. The buildings are predominantly brick masonry. The exception is the connector section that was constructed with a concrete masonry block façade. The interior areas are functional but dated. Most of the high school's fixtures and components are at or approaching the end of their useful service life. The facility is seen as having substantive capital needs in the coming years.

Please note that items that do not provide a positive net present value (NPV) when a life cycle cost analysis is performed are shown as Optional.

Site & Handicap Accessibility

Site Surface

The site features several asphalt-paved parking lots and a similarly paved access roadway, concrete, asphalt, and brick paved walkways, surrounding landscaping, pole-mounted high intensity discharge (HID) lighting, and chain link perimeter fence.

The athletic complex and fields are not included within this report.

No capital costs are carried for landscaping improvements, as they are understood to be handled from operations. If, at some future date, the School Department contemplates re-landscaping, OSI recommends attention to sustainable design. Conventional landscaping relies on large lawns, non-native species, extensive irrigation, and heavy use of fertilizers and pesticides. This type of landscaping also tends to be labor-intensive. There are design features that can enhance soil quality, reduce storm water run-off and pollution, and encourage beneficial insects and wildlife. Such measures can also minimize water usage, maintenance costs, and green waste.

Narrative

As part of this assessment, the facility was examined for compliance with the requirements of the Uniform Federal Accessibility Standards (UFAS). The high school is partially compliant with UFAS, however, deficiencies were noted at several locations. Costs for handicap accessibility modifications and/or improvements at these locations are shown in Year 1 unless otherwise noted.

The hallways, classrooms, and support areas conform to accessibility requirements for accessible routes and clearances. However, it was observed that the restrooms and locker rooms will need to be upgraded to meet current standards. Additionally there is one elevator, located in the older Building "A" section that provides access to all floors. This makes it difficult for mobility challenged individuals to expeditiously access all areas of the high school. Two additional elevators are proposed to provide easier access through out the high school.

Roadways and Parking Areas

Asphalt paved access roadways and parking areas were observed around the facility. Pedestrian walkways are a mix of concrete and asphalt paving. Chain link safety fencing exists adjacent to the auditorium and chain link security was observed along the east access to the lower parking area. Adjacent to the Child Development section of the facility is a playground area with various pieces of play equipment and enclosed by an aluminum picket fence. Site lighting is provided by pole mounted high intensity discharge (HID) and light emitting diode (LED) fixtures.

Existing conditions	Capital needs	Green alternative
Roadway and parking area asphalt surfaces were observed to be in fair to poor condition. Cracked and broken sections were noted throughout.	Resurfacing and repair costs are shown in two phases. Half in Year 1 and half in Year 11.	Repave the existing asphalt with a lighter colored asphalt material. The lighter asphalt material decreases heat retention associated with darker asphalt materials and therefore reduces the heat island effect and allows for

Narrative

Existing conditions	Capital needs	Green alternative
Future asphalt surface maintenance.	Allowances are shown in years 1 and 11 for partial cycles of surface maintenance and in Years 6 and 16 for full cycles.	a cooler, more comfortable site for the residents and visitors alike. Typically, lighter-colored asphalt paving is not more expensive than dark asphalt materials, and therefore, no premium is carried in the plan for this work.
Concrete, asphalt, and small sections of brick surfaces. Fair to poor conditions were noted.	Allowances for major repairs are shown twice in the report at fifty percent of the total area per cycle.	No Green alternative is suggested.
The chain link fencing has exceeded its service life; many sections are damaged or badly rusted through.	Costs to replace all the fencing are shown starting in Year 3. The aluminum picket fencing at enclosing the playground area is in good condition; no capital costs are anticipated for it.	No Green alternative is suggested.
The playground area and play equipment has exceeded its expected service life.	An allowance to upgrade/replace the equipment and play surface are shown in Year 1.	No Green alternative is suggested.

Narrative

Existing conditions	Capital needs	Green alternative
The new LED fixtures are in good condition. The older HID fixtures have exceeded their service life.	Future replacement costs for the LED fixtures are shown in Year 18. Costs to replace the HID fixtures are shown starting in Year 1.	(EWCM 1) Replace all HID fixtures with long life, efficient LED fixtures to reduce energy usage as well as utility and operating costs.
The concrete retaining wall along the south edge of the lower parking area displays some cracking.	Two cycles of repair costs, Years 1 and 11, are shown in the report,	No Green alternative is suggested.

Handicap Accessibility / Section 504 Analysis

Circulation

The hallways, classrooms, and support areas comply with accessible route and clearance requirements.

Narrative

Restrooms and Locker Rooms

Several alterations have been applied to restroom to improve accessibility. However, refurbishing the restroom to meet full compliance will be necessary.

Existing conditions	Capital needs	Green alternative
Restroom and Locker room accessibility	An estimate, pending an engineering/architectural survey, to fully comply with UFAS requirements is shown in Year 1.	Serious consideration should be given to the use of water saving devices and Green materials when rehabbing these areas.

Elevator access between floors

Currently there is one elevator at the high school located in Building "A", basically at the southwest corner of the facility.

Existing conditions	Capital needs	Green alternative
The single existing elevator makes traversing the school building in and expeditious manor difficult for someone that is mobility challenged.	Costs are shown, in the "Building Mechanical Systems" section of this report, to add two additional elevators.	No Green alternative is suggested.

Narrative

Mechanical Room

The two central mechanical rooms contain the heating systems. The domestic hot water (DHW) systems are located in separate areas of the facility. The heating system consists of four, gas-fired steam boilers. The condensed (spent) steam is returned to the boilers via a main condensation receiver and several small receiver stations. The DHW system features two gas-fired boilers and one large storage and two smaller storage tanks. The heating systems are controlled by an antiquated pneumatic control systems and compressed air operated steam valves. Compressed air for this system is supplied by two air compressors. One of which was recently replaced. Several sections of the facility are heated using hydronic heat that is created by passing boiler steam through an array of heat exchangers. Hydronic heat circulation is achieved by several base-mounted pump assemblies.

The reports Green recommendations for the heating of the school building includes replacement of the existing steam boilers with high efficiency hydronic gas-fired boilers; replacement of the existing pneumatic control system with an electronic energy management system (EMS), and replacement of the steam heating system with a hydronic system that utilized efficient heat recovery technology. Upgrades to classroom ventilation with heatpumps, capable of air conditioning, is also considered.

Boilers

There are four, in service, HB Smith gas-fired steam boilers; one was recently replaced.

Existing conditions	Capital needs	Green alternative
The older three boilers have exceeded their expected service life.	Replacement costs are shown (per the costs to replace the newest boiler) in Year 1.	(EWCM 2/2A) Install hydronic high efficiency models with an AFUE of 96% or greater to reduce energy usage as well as utility and operating costs.

Narrative

Controls

An extensive pneumatic control system controls the heating plants and area temperature control.

Existing conditions	Capital needs	Green alternative
The system is antiquated and difficult to maintain. The school staff reports uneven heating, or over heating during cold weather operation.	Allowances to maintain the existing control system are shown, on an annual basis, throughout the report.	(EWCM 3) Replace the existing system with an electronic energy management system (EMS) to provide better and more efficient heating of the individual spaces within the high school.
One new and one old air compressors providing compressed air for the pneumatic control system.	Costs to replace the older compressor are shown in Years 1 and 16. Costs for the future replacement of the new compressor are shown in Year 10.	If the recommended EMS system is installed these compressors are no longer needed and are to be removed.

Hydronic Circulating Pumps

There are ten existing hydronic circulation pumps. The pumps range between 1 and 5 horsepower.

Existing conditions	Capital needs	Green alternative
The pumps are of various ages and condition.	Costs for the as needed replacement of circulation pumps are shown, on an as needed basis, throughout the report	(EWCM 4) When replacing upgrade pump motors from the existing standard service models to premium service models to reduce energy use and utility costs.

Narrative

Existing conditions	Capital needs	Green alternative
		(EWCM 2A) The proposed conversion to an all hydronic system will require additional circulation pumps. Costs for these pumps are shown in Year 1.
Steam condensate collection and return systems. One system recently replaced	Costs are shown in Year 1 to replace the older condensate receiver and in Year 20 for the newer receiver.	If the proposed all hydronic system is installed these devices will no longer be required and will be removed.
Cooling Tower		Should the proposed upgrade to classroom water source heat pumps ventilators be chosen, a cooling tower system will need to be added to remove excess heat during warm weather operations. Costs for the cooling tower system, pending an engineering survey, are shown in Year 1

Narrative

Mechanical Room Piping

Extensive array of isolation valves and piping.

Existing conditions	Capital needs	Green alternative
System is well maintained on an annual basis.	Annual allowances are shown throughout the report for as needed repairs.	No Green alternative is suggested.
There are five building heat exchangers	Allowances to clean and inspect the heat exchangers are shown in Year 1	If the proposed all hydronic heating system is chosen these exchangers will no longer be needed.

Domestic Hot Water

Domestic hot water is provided by two Lochinvar gas-fired boilers and stored in one large (≈ 750 -gal) tank and two smaller (≈ 120 -gal) tanks. All are understood to be glass-lined tanks.

Existing conditions	Capital needs	Green alternative
The Freshman building DHW boiler is four years old. The Old Building DHW boiler is eight years old.	Future replacement costs for the newer boiler are shown in Year 16; the older boilers replacement costs are shown in Year 12.	(EWCM 5) When replacing install high efficiency ($\approx 96\%$ AFUE) condensing DHW boiler to reduce energy usage and utility costs.

Narrative

Existing conditions	Capital needs	Green alternative
The large storage tank is understood to be thirty-three years old. The smaller tanks are five years old.	Replacement costs for the large tanks is shown in Year one. Future replacement costs for the smaller tanks are shown in Years 5 and 15.	(GM 1) Replace the larger tank with six 120-gallon stainless steel storage tanks and the smaller tanks with comparably sized stainless steel tanks. The stainless steel options provide an extended useful life and reduced operating costs.
Smaller glass lined storage tanks	Costs to replace	

Distribution System

The distribution systems include the domestic hot and cold water, steam heat, and sanitary waste.

The distribution systems vary in age and are repaired on an as needed basis.	An allowance is shown throughout the report for as needed repairs of these systems.	<p>No Green alternative is suggested for the domestic water and sanitary waste systems.</p> <p>(EWCM 2) As part of the proposed conversion to an all hydronic heating system costs are shown to replace the steam heat distribution with a hydronic distribution system.</p>
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Narrative

Auditorium Heating, Ventilating, and Air Conditioning

The auditorium is heated by several large steam air handling units.

Existing conditions	Capital needs	Green alternative
The age of the existing system is understood to date to the original addition of the auditorium.	Costs to replace the air handlers are shown in Year 1.	As the auditorium space is used on a limited basis (as opposed to the high school sections) it is recommended that the existing air handler equipment be replaced by roof mounted packaged gas-fired heat and electric cooling ventilation (HVAC) units.

Narrative

Building Mechanical and Electrical Systems

The major building systems include security, fire suppression, heat/ventilation systems, air conditioning, stale air exhaust equipment, emergency egress lighting, fire/smoke detection and notification system, and elevator.

Security Surveillance System

The high school features an extensive closed circuit television system (CCTV).

Existing conditions	Capital needs	Green alternative
CCTV system	Periodic allowances for upgrades and as needed replacement of components are shown every five years within the report.	No Green alternative is suggested.

Fire Suppression

The high school features a limited, street pressure, fire sprinkler system

Existing conditions	Capital needs	Green alternative
Fire sprinkles system	Monitor	No Green alternative is suggested.

Narrative

Classroom Steam Heat Ventilators

Classrooms are heated and ventilated by exterior wall mounted ventilators.

Existing conditions	Capital needs	Green alternative
The ventilators have exceeded their service life.	Costs to replace the ventilators with models that utilize “Heat Recovery” technology are shown starting in Year 1.	(EWCM 6) Optional Install water source heat pumps (with “Heat Recovery”) to reduce energy usage and provide air conditioning to classrooms. The addition air conditioning provides the school department and the Town with a facility that can be utilized year around.

Air Conditioning

Selected areas of the school building are air conditioned using split-system air conditioners with a SEER rating of 10.

Existing conditions	Capital needs	Green alternative
The air conditioners are of various ages and condition.	Costs to replace the air conditioners are shown in Years 1, 10, and 20. This replacement assumes upgrades to the current Federal minimum SEER requirement of SEER 13.	(EWCM 7) Install air conditioners with a SEER rating of 18 to achieve a greater costs saving over lower rated systems.

Narrative

Gymnasium and Locker Room Heat Ventilators

The gymnasiums and locker rooms are ventilated and heated by interior mounted, steam heated, air handler units.

Existing conditions	Capital needs	Green alternative
The gym and locker room air handlers have exceeded their expected service life.	Replacement costs, are shown starting in Year 1.	(EWCM 8) If the proposed hydronic heating system is chosen install hydronic air handlers that utilize "Heat Recovery" technology.

Roof Top Makeup Air Units

Several section of the Old Building (A & B) feature "J. C." roof mounted, hydronically heated, makeup air units.

Existing conditions	Capital needs	Green alternative
The makeup air units have exceeded their expected service life.	Costs to replace the makeup air units are shown starting in Year 1.	(EWCM 9) Install comparable units that utilize "Heat Recovery" technology to reduce energy usage and utility costs.

Building Exhaust Fans

An array of roof mounted exhaust fans remove stale air from the building.

Existing conditions	Capital needs	Green alternative
Approximately half of the exhaust fans have recently been replaced.	Two cycles of replacement costs are shown in the report. Year 1 costs are shown for the older fans and Year 16 costs are shown for the future replacement of the newer fans.	No Green alternative is suggested.

Narrative

Building Power Wiring

The electrical distribution system of the high school varies widely in age, manufacture, and condition.

Existing conditions	Capital needs	Green alternative
Power distribution system.	Allowances are shown in Years 1-5 to replace the older systems and upgrade service where needed.	No Green alternative is suggested.

Emergency Egress Lighting

The emergency egress lighting is a mix of wet and dry cell battery powered fixtures.

Existing conditions	Capital needs	Green alternative
The egress lighting varies in age and condition.	Allowances are shown throughout the report for as needed repairs and replacements.	No Green alternative is suggested.

Narrative

Smoke / Fire Detection and Notification Systems

There are three systems at the facility.

Existing conditions	Capital needs	Green alternative
All systems were recently replaced.	<p>Future replacement costs are shown in Year 18, after a twenty year service life.</p> <p>The system in the Old Building section did not receive new field devices (smoke detectors, pull stations, horn/strobe units. Costs to upgrade the devices are shown in Year 1.</p>	No Green alternative is suggested.

Elevators

There is one hydraulic elevator which serves all floors of the facility. The elevator is located in the oldest (A) building.

Existing conditions	Capital needs	Green alternative
It is understood that the elevator is 33-years old and is approaching the end of its expected service life.	Costs to replace this elevator and to add two additional elevators (for ADA accessibility) are shown in Year 1.	No Green alternative is suggested.

Narrative

Building Architectural Systems

Building Exterior

Arlington High School has been developed over the past 100 years. Its use as the Town of Arlington’s secondary school facility exposes it to extensive use during most of the year. Discussed in this section are the exterior and interior spaces of the “Old Building” (sections A & B), the Freshman Building, Auditorium, Gyms, and Connector (Link) sections. These sections compose the principal school and office areas of the facility. The Athletic complex with its various playing fields is not included in this report.

The buildings are predominantly clad in brick masonry; the Connector section (built in the early 1980s) is clad in colored and textured concrete masonry units. A section of the roof at the Old Building (Bldg B) is pitched and covered with slate shingles. This section also features a wood framed and clad clock steeple and a classically detailed entry portico. The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system. Windows are believed to date from the 1960 and 1980 expansions.

The staff pointed out that water was infiltrating through the floor of the Old Buildings mechanical room.

Boiler Room Floor (Old Building)

Water is infiltrating up through the concrete floor slab.

Existing conditions	Capital needs	Green alternative
Water infiltration	An allowance is shown in Year 1 to have a hydrostatic engineering study preformed to understand the cause of the water infiltration and suggest a remedial course of action.	No Green alternative is suggested.

Narrative

Exterior Stairs

Several sections of masonry and wood stair sets were observed at the high school.

Existing conditions	Capital needs	Green alternative
The concrete and granite stair sets vary in age and condition.	Annual allowances are shown throughout the report for as needed repairs to these stair sets.	No Green alternative is suggested.
A pressure treated wood stair set is located at the cafeteria courtyard. It is in fair condition.	Costs to replace the this stair set are shown in Year 1.	No Green alternative is suggested.

Exterior Entry and Service Doors

There is a mix of wood and glass, aluminum and glass, sliding glass, and flush panel metal doors throughout the facility. Exterior doors are believed to date from the 1960 and 1980 expansions

Existing conditions	Capital needs	Green alternative
All doors experience heavy use. Evidence of repairs (frame reinforcement, added hinges) was observed on many.	Costs to replace the doors are shown starting in Year 1.	(EWCM 11) Optional Replace all doors with comparable insulated fiberglass models that have a U-value of .38 to reduce energy usage as well as utility and operating costs.

Clock Steeple

Narrative

A wood framed and sided clock steeple rises above the B section of the Old Building and dates to the original 1914 construction.

Existing conditions	Capital needs	Green alternative
Close inspection of this steeple was not possible during on the day of the assessment. However, staff reports that areas of dry rot have been found in the structure and siding. In addition the clock is not currently operational.	An allowance to restore the steeple and repair the clock is shown in Year 1.	No Green alternative is suggested.

Hazardous Material Abatement

The administration and maintenance staff expressed their concern regarding hazardous materials used during the original construction. Given the age of most of the school buildings this is a reasonable concern

Existing conditions	Capital needs	Green alternative
Hazardous Material abatement	An allowance to address hazardous material abatement is shown in Year 1 of the report.	The removal of all hazardous material is considered a good Green practice.

Narrative

Exterior Walls

The building sections are clad in brick and concrete block (CMU) masonry. Recent repointing and water proofing work was preformed on a portion of the facility.

Existing conditions	Capital needs	Green alternative
Brick masonry	Cycles of brick repointing and waterproofing are shown every six years, starting in Year 7.	No Green alternative is suggested.
Concrete block masonry	Cycles of concrete block repointing and waterproofing are shown every fifteen years, starting in Year 5.	No Green alternative is suggested.

Trim, Soffits, and Fascia

Painted wood details at older building sections

Existing conditions	Capital needs	Green alternative
Some deterioration noted, peeling paint observed.	Allowances to paint and repair these detail areas are shown in Years 1 and 11.	No Green alternative is suggested.

Narrative

Decorative Faux Balcony – Main Entrance

A painted wood faux balcony accents the main entry of the high school.

Existing conditions	Capital needs	Green alternative
Poor overall condition, section of deterioration noted.	Allowances to repair and paint are shown in Years 1 and 19 of the report.	No Green alternative is suggested.

Building Mounted HID Security Lighting

There are approximately 17 wall mounted LED and HID security flood lights located straightly around the facility.

Existing conditions	Capital needs	Green alternative
Ages and conditions vary.	Costs to replace the HID fixtures are shown starting in Year 1	(EWCM 1) Replace the HID fixtures with long lived efficient LED fixtures to reduce energy usage as well as utility and operating costs.

Windows

Windows are a mix of wood, steel, and aluminum framed models believed to date to the 1960 and 1980 expansions.

Existing conditions	Capital needs	Green alternative
All window types have exceeded their expected useful service life.	Costs to replace all of the windows are shown starting in Year 1.	(EWCM 12) Replacement of the windows/curtain walls and fixed panels with aluminum-framed double-glazed models

Narrative

Existing conditions	Capital needs	Green alternative
		with a low-E (low emissivity) coating, a thermal break, and a gas fill between the glazing layers. The low-e coating will reflect heat from entering the building during the summer, and can reflect radiant infrared energy from escaping the building during the heating months. A thermal break includes an element of low thermal conductivity, such as wood, between the inner and exterior metal frames to reduce thermal transfer. A gas fill (such as argon) between the glazing layers will reduce heat transfer through the glass similar to the low-e coating.

Window Weather Caulking and Lintel Painting

Caulking around window frames

Existing conditions	Capital needs	Green alternative
To be done with window replacement.	A future cycle of window caulking is shown in Year 15.	It is recommended that the windows be monitored and appropriately caulked going forward to keep air infiltration to a minimum.

Narrative

Existing conditions	Capital needs	Green alternative
Painted steel lintels at most window locations	Costs to scrape and paint the lintels are shown in Years 1 and 11.	No Green alternative is suggested.

Roof Surfaces

The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system.

Existing conditions	Capital needs	Green alternative
Membrane roofing - T. P. O. Older sections	Future replacement costs are shown in Year 12.	No Green alternative is suggested. The existing roofing materials are seen as good Green choices.
Membrane roofing – T. P. O. Newer sections	Future replacement costs are shown in Year 20.	
Slate roofing Old Building	Allowances for as needed repairs are shown annually throughout the report.	
Standing seam roofing – Connector, blown off sections noted.	Periodic allowances for repairs are shown in Years 1, 11, and 16.	

Note:

We do not, as yet, recommend a ‘green vegetative roof’ – the installation of soil and vegetation on a waterproof membrane - as an option. While these may also reduce roof temperatures and cooling loads, and reduce stormwater run-off, they are much more expensive than conventional systems, and we see too many questions about performance and maintenance.

Narrative

Building Interior

Interior spaces include hallways, classrooms, support learning areas; cafeteria and commercial kitchen; two gyms, weight room and locker/shower facilities; auditorium and stage area; school offices, school department offices, and restrooms. Most these areas have vinyl composite tile (VCT) flooring. With the exception of approximately 2%, which has been recently replaced by the maintenance staff, the VCT has exceeded its expected useful service life. Many worn areas were observed. VCT is a petroleum based product, as such the material off-gases volatile organic compounds, which are considered unhealthy. As a viable alternative, it is suggested that future flooring replacements use natural linoleum tile. Natural linoleum is a biodegradable product that does not off-gas VOCs and it has a longer service life than its petroleum based alternatives providing a favorable life cycle cost comparison. Carpet maintenance, repairs, and replacement tend to be problematic and costly. It is suggested that carpet tile, with the Green Label Plus designation from the Carpet and Rug Institute (CRI), be considered as an alternative to sheet carpet. Carpet tile allows for the easy replacement of stained and worn areas by in-house staff. The CRI Green Label Plus certified carpet is made from natural fibers and dramatically reduces the off gassing of VOCs.

Flooring

The flooring throughout the hallways and classrooms is chiefly vinyl composite tile (VCT). Selected areas (Media Center, Auditorium, and offices) have carpet flooring.

Existing conditions	Capital needs	Green alternative
The VCT flooring is generally in poor condition. Worn through sections were observed at most locations	Costs to replace all of the VCT are shown in Year 1. In Year 15 allowances are shown for as needed sectional replacements.	(GM 2) Replacement of the VCT with linoleum tile. Linoleum is a natural product (containing linseed oil, powdered wood or cork, ground limestone, resin binders, natural jute backing), which has been found to be more durable than its vinyl tile counterpart.

Narrative

Existing conditions	Capital needs	Green alternative
		Linoleum tile hardens over time, and therefore becomes less susceptible to scratching and cracking. Installation of linoleum has a lower annual life cycle cost than vinyl and keeps the vinyl product out of our landfills in the future.
Carpet flooring varies in condition and age.	Costs to replace the carpet are shown in Years 1 and 11.	(GM 3) Optional It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.

Narrative

Hallway Doors

Interior double fire doors, steel doors in steel frames.

Existing conditions	Capital needs	Green alternative
Most of the interior fire doors are failing in that hinges have been replaced a number of times and the doors are now dragging and will not provide protection they were originally intended to provide.	Costs to replace the doors, frames and closers are shown starting in Year 1.	No Green alternative is suggested.

Interior Lighting

The interior lighting was upgraded, in phases, to all fluorescent fixtures in the past.

Existing conditions	Capital needs	Green alternative
The fluorescent lighting is a mix of different ages and bulb types.	Costs to replace all the fixtures are shown starting in Year 1.	(EWCM 13) Replace the fluorescent fixtures with long lived, efficient LED fixtures to significantly reduce energy usage as well as utility and operating costs.

Student Lockers

Metal recessed lockers throughout the hallways of the school's buildings

Existing conditions	Capital needs	Green alternative
The lockers vary widely in condition and age.	Costs to replace the lockers are shown starting in Year 1.	No Green alternative is suggested.

Narrative

Stairs

Stairs are covered with rubber flooring and treads. Doors are double metal fire rated types.

Existing conditions	Capital needs	Green alternative
Conditions vary	Replacement costs are shown annually throughout the report.	Suggest the use of a low-VOC adhesive when replacing.
Conditions vary	Replacement costs are shown starting in Year 1	No Green alternative is suggested.

Classrooms

Classrooms vary in size and use. Floors are VCT and the walls and ceilings are painted surfaces. Each classroom has a set of wood cabinets and shelving. Science and technology classrooms also feature furnishing specific to their individual needs. The Administration expressed its concern that the features in the science and tech classrooms may not be up to current standards.

Existing conditions	Capital needs	Green alternative
Cabinetry and shelving conditions vary depending on age and use.	Allowances to replace the cabinetry and shelving are shown starting in Year 1.	No Green alternative is suggested. .
Science and technology classrooms	Allowances to upgrade the fixtures and futures in these classrooms are shown starting in Year 3.	No Green alternative is suggested.

Narrative

Media Center

The media center combines a traditional library and computer center. Furnishings include shelving, reading/study tables, and privacy alcoves.

Existing conditions	Capital needs	Green alternative
The carpet varies in condition depending on location (traffic patterns show more wear that sitting areas).	Carpet replacement costs are shown every ten years starting in Year 1.	(GM 3) Optional It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.
The furnishings in the media center are in good condition.	Future replacement allowances are shown starting in Tear 10	No Green alternative is suggested.

Narrative

Gymnasiums and Locker Rooms

Gym and weight room floors are covered with rubber sheet goods. Locker room floors are painted concrete at the lockers and ceramic tile in the shower areas.

Existing conditions	Capital needs	Green alternative
Gym flooring	Costs to replace the gym flooring are shown in Year 10.	No Green alternative is suggested.
Locker room painted flooring.	Repainting cycles are shown every five years.	Recommend the use of low-VOC content paint.

Cafeteria / Kitchen

Full service commercial kitchen and dining room with fold away table/seating furniture.

Existing conditions	Capital needs	Green alternative
All of the kitchen equipment is commercial grade.	Annual allowances for as needed replacements and repairs are shown throughout the report.	No Green alternative is suggested.
Fold away tables	Replacement costs are shown in Year 10 of the report	No Green alternative is suggested.

Narrative

Auditorium

The Auditorium features acoustic wood paneled walls and some small areas of painted drywall; the ceiling is a painted surface. Flooring is a mix of replaceable wood stage paneling (considered an operating expense), carpeted aisles, and sealed concrete (under the seats).

Existing conditions	Capital needs	Green alternative
Carpeted aisles.	Costs to replace the carpeting are shown in Years 1 and 16 of the report	(GM 3) Optional It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.
Seating; wood folding stadium type.	Allowances to repair / replace seating, as needed, are shown in Years 1, 6, 11, and 16.	No Green alternative is suggested.

Narrative

Restrooms

Restrooms feature painted walls and ceilings, ceramic tile floors, and standard institutional grade fixtures. Portions are aged metal types. Some partitions have been replaced with heavy duty PVC paneling.

Existing conditions	Capital needs	Green alternative
Fixtures and accessories have been replaced on an as needed basis.	Allowances to continue this practice are shown throughout the report.	It is suggested that water saver type fixtures be installed when available.
Metal restroom partitions, poor overall condition	Costs to replace the metal partitions with heavy duty PVC are shown starting in Year 1.	No Green alternative is suggested.

School Offices, Support Areas, and School Department Offices

Walls and ceilings are painted surfaces, floors are a mix of VCT and carpet.

Existing conditions	Capital needs	Green alternative
Carpeted areas	Costs to replace that carpet are shown in Years 1 and 10.	(GM 3) Optional It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.

Narrative

Capital Needs Summary, Replacement Reserve Analysis - *Conventional*

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$29,829,456 in current dollars, or \$33,348,660 in inflated dollars.

Capital Needs Summary, Replacement Reserve Analysis - *Green*

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$32,384,400 in current dollars, or \$35,235,571 in inflated dollars.

Additional Notes:

1. The Physical Assessment of the property was conducted on April 16th & 17th, 2013. Members of the Arlington High School staff provided information on the property's current condition, recent repairs, and near-term needs. Additional information was provided by informal interviews with residents during the dwelling unit evaluation portion of the assessment. We would like to thank site staff for their assistance.
2. OSI was represented on this assignment by Bob Labadini. Mr. Labadini is a Building Performance Institute (BPI)-certified energy auditor, and LEED Green Associate accredited. Mr. Labadini complied with the applicable professional standards for ethics as defined by the BPI Code of Ethics during the assessment process.
3. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.



The front access loop and parking



Example of asphalt work needed
on front access loop



The rear access loop. Note snowplow damage.



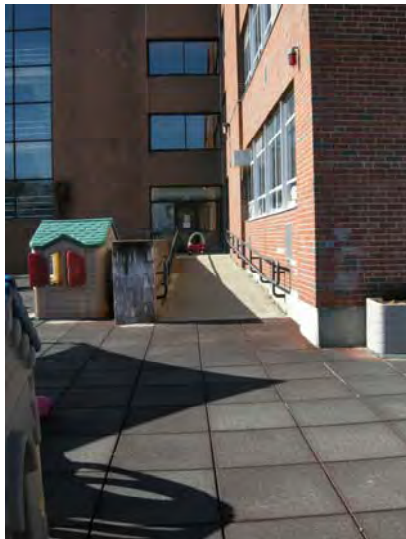
Section of rear (lower) parking area



Concrete walkway with spalling concrete areas



Typical example of needed concrete repairs



The playground at the Child Development Center



Example of the new LED site lighting fixture



Gas-fired steam boilers at the Freshman Building



Recently replaced boiler at the Old Buildings



Older boiler at the Old Buildings



New condensate receiver at Old Buildings



Old condensate receiver at Freshman Building



New air compressor at Old Buildings



Old compressor at Freshman Building



Typical pneumatic system control panel



Recently replaced pneumatically controlled steam valve



Failing pneumatically controlled steam valve



Typical steam to water heat exchanger



Domestic hot water boiler at the Old Buildings



One of two glass-lined DHW storage tanks at the Old Buildings



DHW boiler at the Freshman Building



Large DHW storage tank at the Freshman Building



Typical hydronic heat circulation pumps



One of three split-system air conditioners



Typical gym/locker room heat/ventilator unit



Typical Old Buildings roof mounted heat/ventilation unit



Typical roof mounted exhaust fans



Typical new addressable fire alarm panel



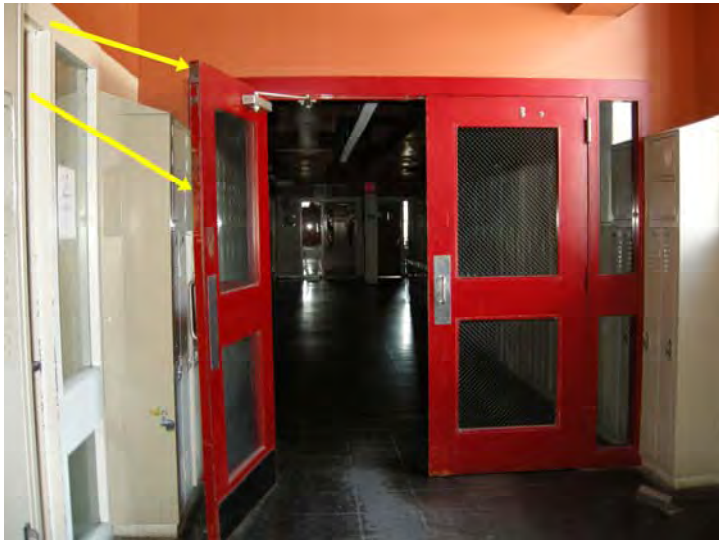
Auditorium wing entry doors



Typical service doors



Connector section doors from central Courtyard.
Note frame reinforcement.



Typical interior fire doors.
Note worn areas indicating miss alignment.



Building "B" of Old Buildings showing
classic façade and clock steeple



The auditorium wing



High School office wing



Building "A" of the Old Buildings section



Main Entry of Building "A"



West elevation of building "A"



West elevation of the connector section



North elevation of the Red Gym



West facing entry of the connector section



East and North elevations of the Freshman Building



East elevation of the "B" building



East elevation of the connector section referred to as the "Link"



Building "B" slate roof area



A portion of the connector section's standing seam metal roof



Typical T.P.O. roof section



The central courtyard



Damaged gutters



Typical hallway



Typical example of VCT flooring wear.



Typical classroom



Typical classroom cabinetry.



Typical classroom heat/ventilation unit



The Media Center



Blue Gym



Red Gym



Girls Locker Room



Typical Girls private shower stall



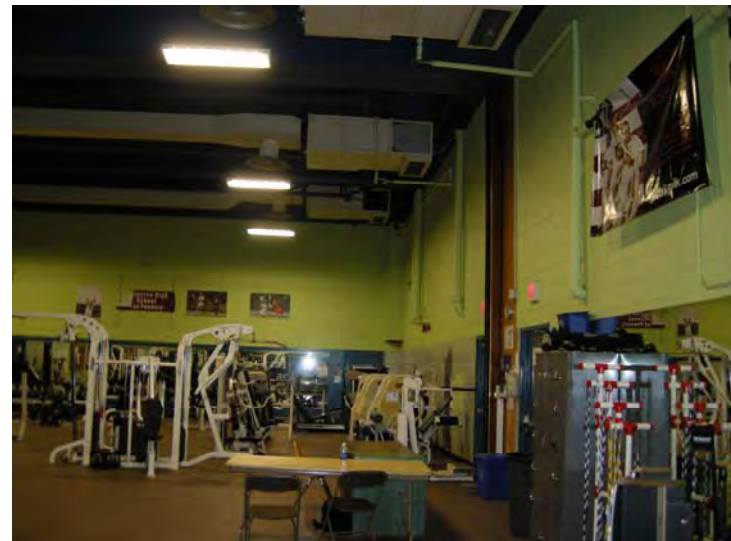
Boys Gym



Typical boys gym gang shower



Typical restroom area with updated partitions



The weight Room



The cafeteria



The commercial kitchen



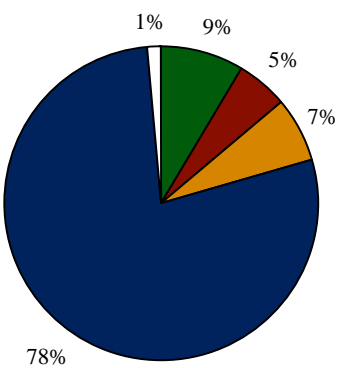
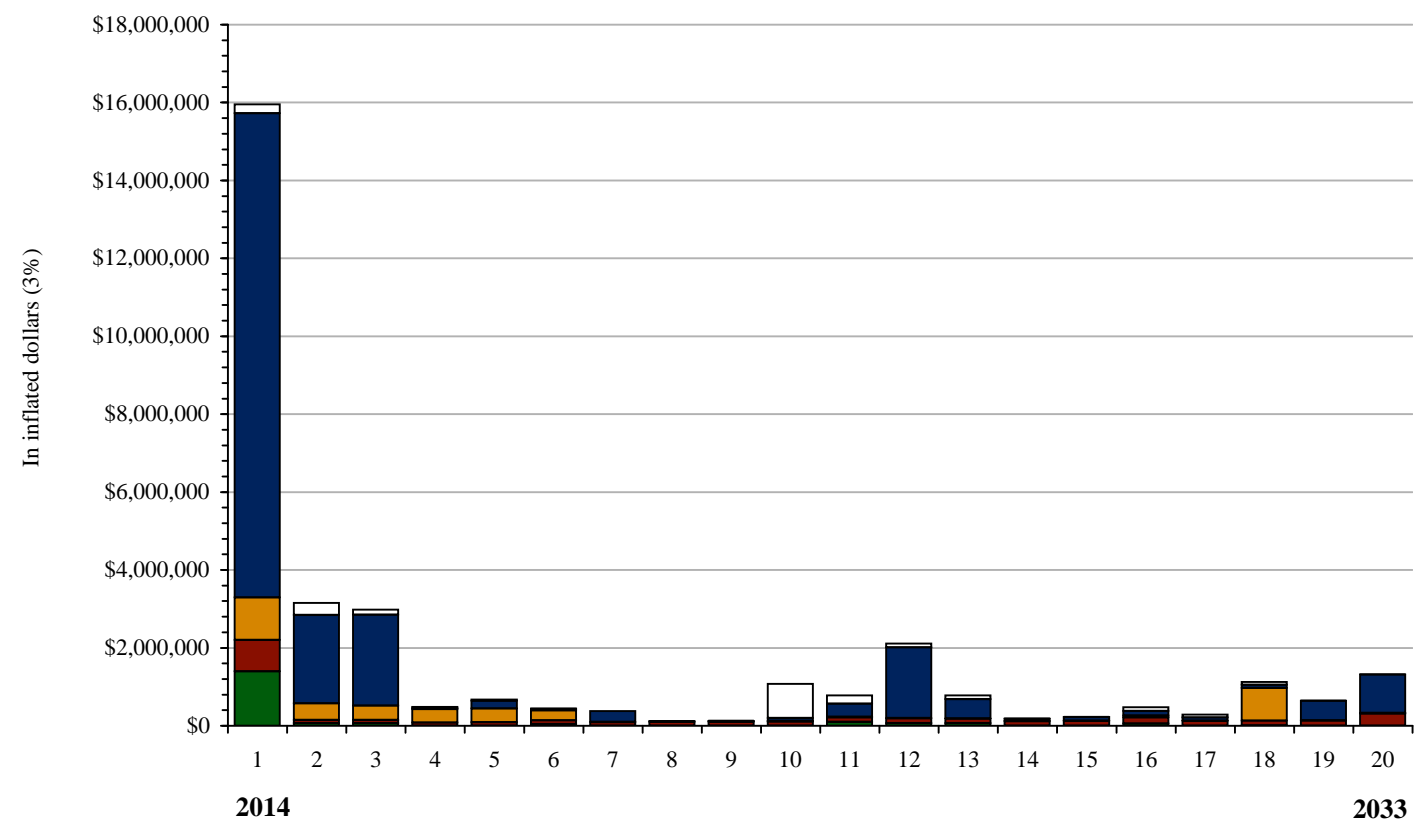
The auditorium



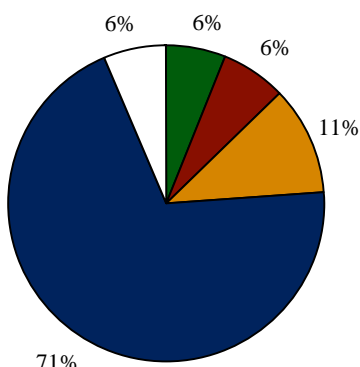
The auditorium stage area

Capital Needs Summary - *Conventional*

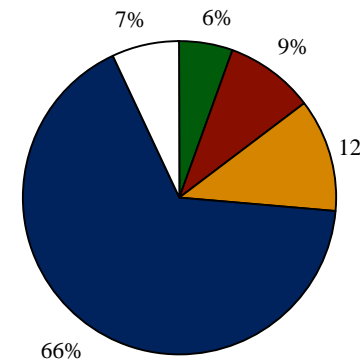
Arlinton High School



Year One Distribution



Ten Year Distribution



Twenty Year Distribution

Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$1,393,054	\$1,570,938	\$1,864,261
Mechanical Room	\$812,579	\$1,641,676	\$3,071,587
Building Mech. & Elec.	\$1,086,833	\$2,870,687	\$3,849,036
Building Architectural	\$12,433,938	\$17,673,911	\$22,231,967
Bldg. Arch Support	\$226,990	\$1,638,544	\$2,331,809
In inflated dollars:	\$15,953,395	\$25,395,755	\$33,348,660
In current dollars:	\$15,953,395	\$24,593,084	\$29,829,456

Capital Needs Summary - *Conventional*

OSI Ref: 13472
 Property Age: 100 Years
 Financing: Municipal

Residential Buildings: 1
 Total Number of Units: 1
 Occupancy: School

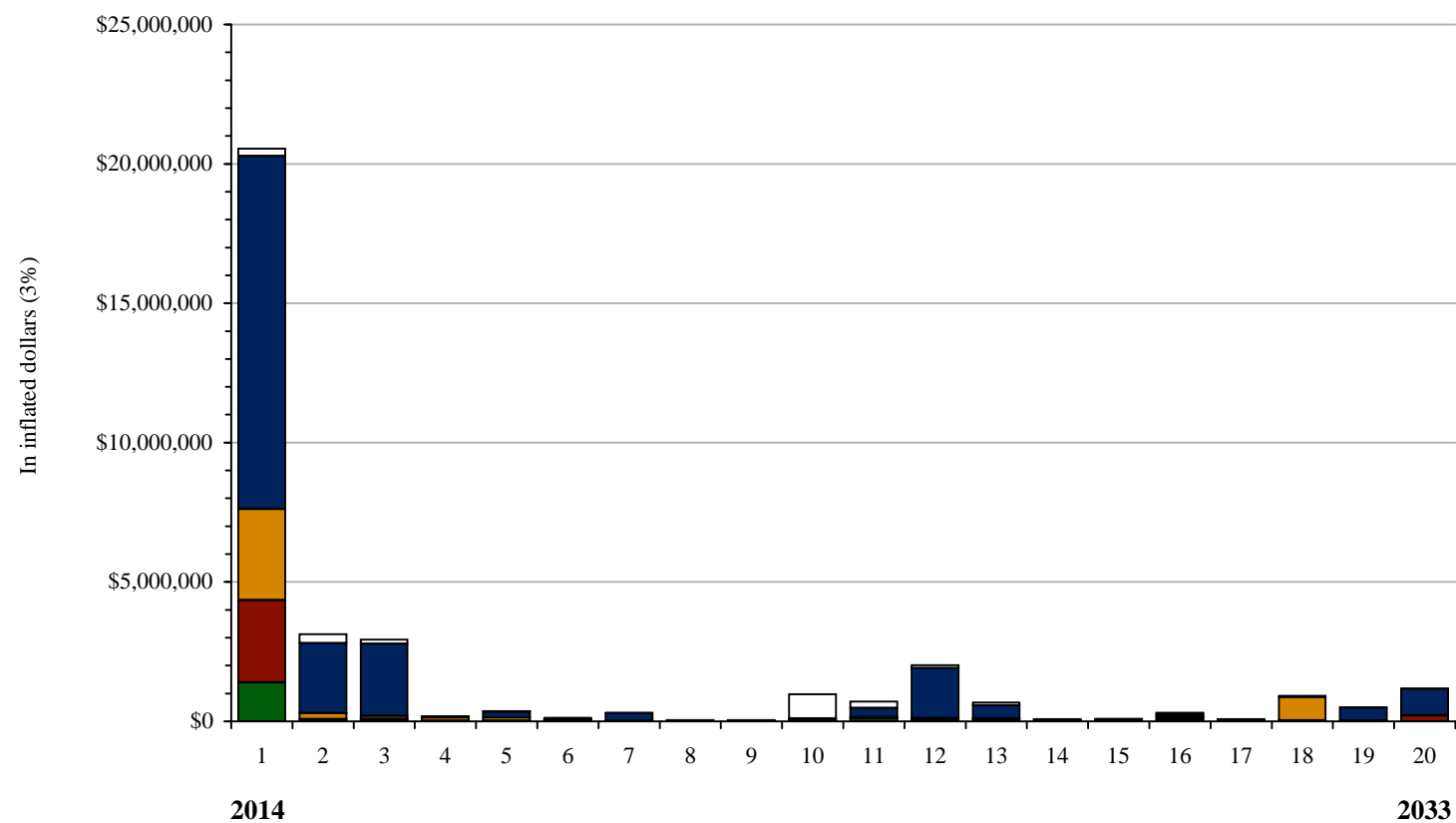
	2014 Year 1	2015 Year 2	2016 Year 3	2017 Year 4	2018 Year 5	2019 Year 6	2020 Year 7	2021 Year 8	2022 Year 9	2023 Year 10
Site Systems & Accessibility Surface/Accessibility	\$1,393,054	\$67,789	\$69,822	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Site Sub-Total	\$1,393,054	\$67,789	\$69,822	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Mechanical Room Boilers	\$706,613	\$24,548	\$25,285	\$26,043	\$26,825	\$34,249	\$28,458	\$29,312	\$30,191	\$39,865
Boiler Room Systems	\$105,966	\$55,105	\$56,758	\$58,461	\$64,717	\$62,021	\$63,882	\$65,798	\$67,772	\$69,805
Mechanical Sub-Total	\$812,579	\$79,653	\$82,043	\$84,504	\$91,541	\$96,270	\$92,340	\$95,110	\$97,964	\$109,671
Building Mech. & Electrical Mechanical	\$349,333	\$325,823	\$256,031	\$230,930	\$237,858	\$256,586	\$3,582	\$3,690	\$3,800	\$8,481
Electrical	\$127,500	\$105,575	\$108,742	\$112,005	\$115,365	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262
Elevators	\$610,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	\$1,086,833	\$431,398	\$364,773	\$342,934	\$353,222	\$259,484	\$6,567	\$6,764	\$6,967	\$11,743
Building Architectural Structural and Exterior	\$11,110,217	\$965,333	\$994,293	\$14,970	\$183,958	\$15,882	\$262,233	\$2,460	\$2,534	\$2,610
Roof Systems	\$13,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893
Halls, Stairs, Class Rooms	\$681,370	\$701,811	\$722,865	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289
Class Rooms, Industrial Arts	\$628,602	\$593,037	\$610,828	\$0	\$0	\$0	\$0	\$0	\$0	\$61,891
Building Architectural Sub-Total	\$12,433,938	\$2,264,043	\$2,331,965	\$27,685	\$197,054	\$29,371	\$276,127	\$16,771	\$17,274	\$79,682
Building Architectural Gymnasiums/Locker Rooms	\$45,682	\$224,573	\$45,653	\$21,855	\$22,510	\$3,072	\$0	\$0	\$0	\$409,538
Cafeteria/Auditorium	\$38,810	\$30,842	\$31,768	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$463,194
Auditorium/Restrooms/Offices	\$70,963	\$57,267	\$58,985	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0
School Department Offices	\$71,535	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Architectural Sub-Total	\$226,990	\$312,683	\$136,406	\$27,318	\$28,138	\$15,824	\$5,970	\$6,149	\$6,334	\$872,732
Total Capital Costs	\$15,953,395	\$3,155,567	\$2,985,008	\$482,442	\$669,955	\$441,222	\$381,005	\$124,794	\$128,538	\$1,073,828

Arlinton High School

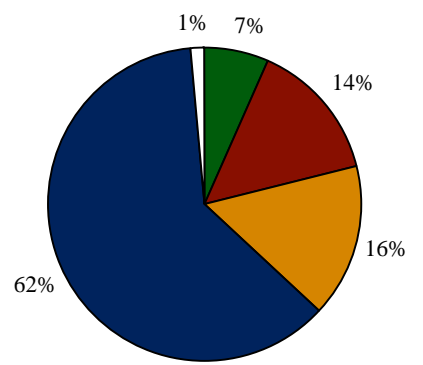
Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2024 Year 11	2025 Year 12	2026 Year 13	2027 Year 14	2028 Year 15	2029 Year 16	2030 Year 17	2031 Year 18	2032 Year 19	2033 Year 20	
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	Site Systems & Accessibility Surface Accessibility
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	Site Sub-Total
\$39,704	\$32,991	\$33,981	\$35,000	\$36,050	\$56,497	\$38,246	\$39,393	\$40,575	\$217,756	Mechanical Room Boilers
\$71,900	\$87,899	\$76,278	\$78,567	\$86,974	\$98,931	\$85,852	\$88,427	\$91,080	\$93,813	Boiler Room Systems
\$111,603	\$120,890	\$110,259	\$113,567	\$123,024	\$155,428	\$124,097	\$127,820	\$131,655	\$311,569	Mechanical Sub-Total
\$17,471	\$4,153	\$4,277	\$4,406	\$4,538	\$50,634	\$4,814	\$4,959	\$5,107	\$11,398	Building Mech. & Electrical Mechanical
\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$832,209	\$4,256	\$4,384	Electrical
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Elevators
\$20,831	\$7,613	\$7,842	\$8,077	\$8,319	\$54,529	\$8,826	\$837,167	\$9,363	\$15,782	Mechanical & Electrical Sub-Total
\$52,010	\$18,964	\$329,801	\$20,119	\$38,420	\$39,572	\$21,984	\$22,644	\$436,361	\$286,600	Building Architectural Structural and Exterior
\$18,479	\$1,596,411	\$5,347	\$5,507	\$5,672	\$21,422	\$6,018	\$6,198	\$6,384	\$644,561	Roof Systems
\$58,830	\$60,595	\$62,413	\$11,581	\$26,831	\$27,636	\$28,465	\$29,319	\$30,198	\$31,104	Halls, Stairs, Lobbies
\$208,982	\$142,111	\$98,849	\$20,707	\$21,329	\$21,968	\$22,627	\$23,306	\$24,005	\$24,726	Community Spaces
\$338,301	\$1,818,081	\$496,410	\$57,914	\$92,251	\$110,599	\$79,094	\$81,467	\$496,949	\$986,991	Building Architectural Sub-Total
\$34,514	\$31,882	\$32,838	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0	Dwelling Units Living Areas
\$33,791	\$22,532	\$23,208	\$7,343	\$7,563	\$29,082	\$29,955	\$30,853	\$8,512	\$8,768	Bathrooms
\$51,145	\$44,374	\$45,705	\$0	\$0	\$64,901	\$42,193	\$43,459	\$0	\$0	Kitchens
\$93,724	\$0	\$0	\$0	\$0	\$2,797	\$0	\$0	\$0	\$0	Mechanical & Electrical
\$213,174	\$98,788	\$101,751	\$7,343	\$7,563	\$100,907	\$72,148	\$74,312	\$8,512	\$8,768	Dwelling Units Sub-Total
\$783,655	\$2,110,404	\$783,245	\$186,900	\$231,157	\$475,586	\$284,165	\$1,128,205	\$646,479	\$1,323,109	Total Capital Costs

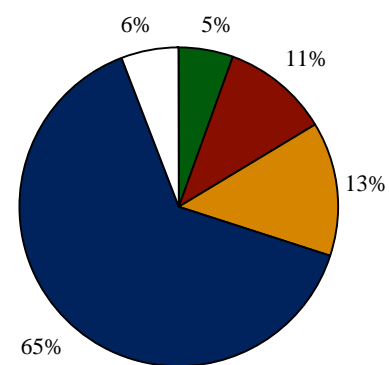
Capital Needs Summary - Green



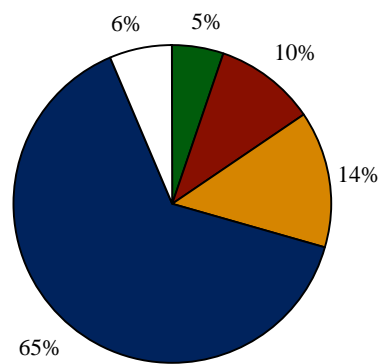
Arlinton High School



Year One Distribution



Ten Year Distribution



Twenty Year Distribution

Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$1,393,887	\$1,573,514	\$1,866,837
Mechanical Room	\$2,962,870	\$3,153,730	\$3,654,907
Building Mech. & Elec.	\$3,255,250	\$3,865,484	\$4,862,530
Building Architectural	\$12,673,727	\$18,381,016	\$22,634,156
Bldg. Arch Support	\$257,633	\$1,694,253	\$2,217,142
In inflated dollars:	\$20,543,367	\$28,667,997	\$35,235,571
In current dollars:	\$20,543,367	\$28,035,621	\$32,384,400

Capital Needs Summary - Green

OSI Ref: 13472
 Property Age: 100 Years
 Financing: Municipal

Residential Buildings: 1
 Total Number of Units: 1
 Occupancy: School

	2014 Year 1	2015 Year 2	2016 Year 3	2017 Year 4	2018 Year 5	2019 Year 6	2020 Year 7	2021 Year 8	2022 Year 9	2023 Year 10
Site Systems & Accessibility										
Surface	\$1,393,887	\$68,647	\$70,707	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Accessibility	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Sub-Total	\$1,393,887	\$68,647	\$70,707	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Mechanical Room										
Boilers	\$1,846,870	\$0	\$0	\$0	\$0	\$9,042	\$0	\$0	\$0	\$8,768
Boiler Room Systems	\$1,116,000	\$16,480	\$16,974	\$17,484	\$23,636	\$18,548	\$19,105	\$19,678	\$20,268	\$20,876
Mechanical Sub-Total	\$2,962,870	\$16,480	\$16,974	\$17,484	\$23,636	\$27,591	\$19,105	\$19,678	\$20,268	\$29,644
Building Mech. & Electrical										
Mechanical	\$2,517,750	\$106,090	\$3,183	\$3,278	\$3,377	\$15,071	\$3,582	\$3,690	\$3,800	\$11,091
Electrical	\$127,500	\$105,575	\$108,742	\$112,005	\$115,365	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262
Elevators	\$610,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	\$3,255,250	\$211,665	\$111,925	\$115,283	\$118,741	\$17,969	\$6,567	\$6,764	\$6,967	\$14,353
Building Architectural										
Structural and Exterior	\$11,224,283	\$1,081,792	\$1,114,246	\$14,970	\$183,958	\$15,882	\$262,233	\$2,460	\$2,534	\$2,610
Roof Systems	\$13,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893
Halls, Stairs, Class Rooms	\$779,482	\$802,866	\$826,952	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289
Class Rooms, Industrial Arts	\$656,212	\$614,791	\$633,235	\$0	\$0	\$0	\$0	\$0	\$0	\$43,492
Building Architectural Sub-Total	\$12,673,727	\$2,503,312	\$2,578,411	\$27,685	\$197,054	\$29,371	\$276,127	\$16,771	\$17,274	\$61,284
Building Architectural										
Gymnasiums/Locker Rooms	\$45,682	\$224,573	\$45,653	\$21,855	\$22,510	\$3,072	\$0	\$0	\$0	\$409,538
Cafeteria/Auditorium	\$42,910	\$35,065	\$36,117	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$463,194
Auditorium/Restrooms/Offices	\$81,192	\$65,392	\$67,354	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0
School Department Offices	\$87,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Architectural Sub-Total	\$257,633	\$325,030	\$149,124	\$27,318	\$28,138	\$15,824	\$5,970	\$6,149	\$6,334	\$872,732
Total Capital Costs	\$20,543,367	\$3,125,134	\$2,927,141	\$187,770	\$367,569	\$131,027	\$307,769	\$49,362	\$50,843	\$978,014

Arlinton High School

Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2024 Year 11	2025 Year 12	2026 Year 13	2027 Year 14	2028 Year 15	2029 Year 16	2030 Year 17	2031 Year 18	2032 Year 19	2033 Year 20	
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	Site Systems & Accessibility Surface Accessibility
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	Site Sub-Total
\$10,483	\$0	\$0	\$0	\$0	\$22,622	\$0	\$0	\$0	\$175,964	Mechanical Room Boilers Boiler Room Systems
\$21,503	\$43,603	\$22,812	\$23,497	\$24,201	\$49,076	\$25,675	\$26,446	\$27,239	\$28,056	
\$31,985	\$43,603	\$22,812	\$23,497	\$24,201	\$71,698	\$25,675	\$26,446	\$27,239	\$204,020	Mechanical Sub-Total
\$17,471	\$4,153	\$4,277	\$4,406	\$4,538	\$65,824	\$4,814	\$4,959	\$5,107	\$14,905	Building Mech. & Electrical Mechanical Electrical Elevators
\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$832,209	\$4,256	\$4,384	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$20,831	\$7,613	\$7,842	\$8,077	\$8,319	\$69,719	\$8,826	\$837,167	\$9,363	\$19,289	Mechanical & Electrical Sub-Total
\$52,010	\$18,964	\$329,801	\$20,119	\$38,420	\$39,572	\$21,984	\$22,644	\$436,361	\$286,600	Building Architectural Structural and Exterior Roof Systems Halls, Stairs, Lobbies Community Spaces
\$18,479	\$1,596,411	\$5,347	\$5,507	\$5,672	\$21,422	\$6,018	\$6,198	\$6,384	\$644,561	
\$58,830	\$60,595	\$62,413	\$11,581	\$11,928	\$12,286	\$12,655	\$13,034	\$13,425	\$13,828	
\$198,753	\$122,593	\$78,745	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$328,071	\$1,798,562	\$476,306	\$37,207	\$56,020	\$73,281	\$40,657	\$41,877	\$456,170	\$944,989	Building Architectural Sub-Total
\$34,514	\$31,882	\$32,838	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0	Dwelling Units Living Areas Bathrooms Kitchens Mechanical & Electrical
\$33,791	\$22,532	\$23,208	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768	
\$51,145	\$44,374	\$45,705	\$0	\$0	\$27,584	\$0	\$0	\$0	\$0	
\$114,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$234,376	\$98,788	\$101,751	\$7,343	\$7,563	\$39,502	\$8,024	\$8,264	\$8,512	\$8,768	Dwelling Units Sub-Total
\$715,009	\$2,013,599	\$675,694	\$76,123	\$96,104	\$308,322	\$83,182	\$921,191	\$501,285	\$1,177,065	Total Capital Costs

Projected Capital Needs Over Twenty Years

SITE SYSTEMS

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
SURFACE									
	99,256								Asphalt; broken and cracked surfaces, sections repaired
Roadways/Parking	49,628 sf	2.25	\$111,663		varies	20	1 /11	over 3 Years	Costs to resurface @50%/cycle
Roadways/Parking (Green)	sf								
	99,256	0.35	\$34,740		varies	10	6 /16	in 1 Year	Periodic asphalt surface repairs (crack fill, potholes, etc.).
Roadway/Parking Repairs	49,256 sf	0.35	\$17,240		varies	5	1 /11	in 1 Year	Allowances for full and interim partial repairs
Roadway/Parking Repairs (Green)	sf								
	29,280				100				Concrete, asphalt, and brick surfaces. Fair to poor cond.
Pedestrian Paving	14,640 sf	2.00	\$29,280		varies	10	1 /11	over 3 Years	Costs to repair @50%/cycle
									Chain link safety fencing at auditorium & east access
Fencing	1,540 lf	25.00	\$38,500		varies	20	1	over 3 Years	Costs to replace
Fencing (Green)	sf								
									Rubberized surface, plastic and metal play equipment
Playground-Child Development	1 ls	50000.00	\$50,000		20	20	1	in 1 Year	Costs to replace
Playground-Child Development (Green)	lf								
									LED pole mounted fixtures
Site Lighting	2 ea	2250.00	\$4,500		2	20	18	in 1 Year	Future replacement costs
Site Lighting (Green)	lf								
									Concrete retaining walls at parking area, several cracks
Retaining Walls	1 ls	10000.00	\$10,000		100	10	1 /11	in 1 Year	Periodic repair allowances
									HID pole mounted fixtures
Site Lighting	10 ea	1800.00	\$18,000		20+	20	1	over 3 Years	Costs to replace
Site Lighting (Green)	10 ea	2050.00	\$20,500	\$2,500	20	20	1	E1 over 3 Years	Install LED Fixtures

ACCESSIBILITY

Circulation	1 ls				Add	10			Add elevators (see "Building Mechanical" section)
Circulation (Green)	ls								
Restrooms	1 ls	750000.00	\$750,000		100	60	1	in 1 Year	Restrooms: upgrade to current accessibility stand.
Restrooms (Green)	ea								
Locker Rooms	1 ls	500000.00	\$500,000		100	60	1	in 1 Year	Locker Rms upgrade to current accessibility stand.
Locker Rooms (Green)	ea								
Miscellaneous	ls								

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
SURFACE																				
Roadways/Parking	\$37,221	\$38,338	\$39,488	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,022	\$51,523	\$53,068	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roadways/Parking (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roadway/Parking Repairs	\$17,240	\$0	\$0	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0	\$23,169	\$0	\$0	\$0	\$0	\$54,123	\$0	\$0	\$0	\$0
Roadway/Parking Repairs (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pedestrian Paving	\$9,760	\$10,053	\$10,354	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,117	\$13,510	\$13,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fencing	\$12,833	\$13,218	\$13,615	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fencing (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Playground-Child Development	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Playground - Child Dev. (Grren)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,438	\$0	\$0
Site Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Retaining Walls	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting	\$6,000	\$6,180	\$6,365	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting (Green)	\$6,833	\$7,038	\$7,249	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ACCESSIBILITY																				
Circulation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Circulation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Restrooms	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Restrooms (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Rooms	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Rooms (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

MECHANICAL ROOM

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)					Notes				
BOILERS																
												NG-fired HB Smith sectional steam boilers				
Boilers-Freshman Building	2 ea	190,000	\$380,000		53	40+	1		in	1	Year	Costs per recent old bldg replacement				
Boilers-Freshman Building (Green)	2 ea	304,000	\$608,000	\$228,000	53	40	1		E2	in	1	Year	NG-fired HB Smith sectional steam boilers Upgd to high eff. boilers hydronic (±96% AFUE)			
Boilers-Old Building	1 ea	190,000	\$190,000		53	40+	1			in	1	Year	NG-fired HB Smith sectional steam boilers Costs per recent old bldg replacement			
Boilers-Old Building (Green)	1 ea	304,000	\$304,000	\$114,000	53	40	1		E2	in	1	Year	NG-fired HB Smith sectional steam boilers Upgd to high eff. boilers hydronic (±96% AFUE)			
Boilers-Old Building	1 ea				5	40							NG-fired HB Smith sectional steam boilers Monitor			
Boilers-Old Building (Green)	1 ea	30,000	\$30,000	\$30,000	5	40	1		E2	in	1	Year	NG-fired HB Smith sectional steam boilers Convert to Hydronic			
Controls	1 ls	71,500	\$71,500		100	3	1	4	7	10	13	16	19	Panels, devices, & valves. Some recent replacements Periodic costs to repair/replace		
Controls (Green)	1 ls	650,000	\$650,000	\$578,500	100	15	1		E3	in	1	Year	Demo & Upgrade to digital energy management system (EMS)			
Pneumatic Compressors	1 ea	6,720	\$6,720		5	15	10				1			Multi-stage air compressor packages. One recently replaced		
	1 ea	6,720	\$6,720		varies	15	1	16			in	1	Year	Costs to replace		
Pneumatic Compressors (Green)	ea													Not replaced if upgrade to EMS is chosen		
Hydronic Circulation Pumps	4 ttl													Standard duty base-mounted 5-HP pumps		
	1 ea	3,360	\$3,360		varies	20	1	6	11	16		in	1	Year	Periodic costs to replace one pump assembly	
Hydronic Circulation Pumps (Green)	4 ttl													Install premium duty pumps		
	1 ea	4,500	\$4,500	\$1,140	varies	20	1	6	11	16		E4	in	1	Year	Periodic costs to replace one pump assembly
Hydronic Circulation Pumps	4 ea													Standard duty Base-mounted 1 hp pumps		
	1 ea	2,350	\$2,350		varies	20	1	6	11	16			in	1	Year	Periodic costs to replace one pump assembly
Hydronic Circulation Pumps (Green)	4 ttl													Premium Duty base-mounted 1-HP pumps		
	1 ea	3,300	\$3,300	\$950	varies	20	1	6	11	16		E4	in	1	Year	Periodic costs to replace one pump assembly
Heating Circulation Pumps	ea															
Heating Circulation Pumps (Green)	8 ea	8,500	\$68,000	\$68,000	Add	20	1				in	1	Year	Add Hydronic circulation pumps w/new boiler syst		
Condensate & Feed Water	1 ea	100,350	\$100,350		5	25	20				in	1	Year	Not replaced if upgrade to HE hydronic boilers		
	1 ea	100,350	\$100,350		53	25	1				in	1	Year	Costs to replace		
Miscellaneous	ea															
Add Cooling Towers (Green)	3 ea	24,000	\$72,000	\$72,000	Add	20	1				in	1	Year	Add cooling tower for class room "Heatpump" syst.		
Miscellaneous	ea															
Miscellaneous (Green)	ea															

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
BOILERS																				
Boilers-Freshman Building	\$380,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Freshman Building (Green)	\$608,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building	\$190,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building (Green)	\$304,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building (Green)	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Controls	\$23,833	\$24,548	\$25,285	\$26,043	\$26,825	\$27,629	\$28,458	\$29,312	\$30,191	\$31,097	\$32,030	\$32,991	\$33,981	\$35,000	\$36,050	\$37,132	\$38,246	\$39,393	\$40,575	\$41,792
Controls (Green)	\$650,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pneumatic Compressors	\$6,720	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,768	\$0	\$0	\$0	\$0	\$0	\$10,470	\$0	\$0	\$0	\$0
Pneumatic Comp (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydronic Circulation Pumps	\$3,360	\$0	\$0	\$0	\$0	\$3,895	\$0	\$0	\$0	\$0	\$4,516	\$0	\$0	\$0	\$0	\$5,235	\$0	\$0	\$0	\$0
Hyd Circ Pumps (Green)	\$4,500	\$0	\$0	\$0	\$0	\$5,217	\$0	\$0	\$0	\$0	\$6,048	\$0	\$0	\$0	\$0	\$7,011	\$0	\$0	\$0	\$0
Hydronic Circulation Pumps	\$2,350	\$0	\$0	\$0	\$0	\$2,724	\$0	\$0	\$0	\$0	\$3,158	\$0	\$0	\$0	\$0	\$3,661	\$0	\$0	\$0	\$0
Hyd Circ Pumps (Green)	\$3,300	\$0	\$0	\$0	\$0	\$3,826	\$0	\$0	\$0	\$0	\$4,435	\$0	\$0	\$0	\$0	\$5,141	\$0	\$0	\$0	\$0
Heating Circulation Pumps	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heating Circ Pumps (Green)	\$68,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Condensate & Feed Water	\$100,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$175,964
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Cooling Towers (Green)	\$72,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

MECHANICAL ROOM--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
BOILER ROOM SYSTEMS									
									Exten network,steam/hydronic control valves/piping
Boiler Room Piping/Valves	1 ls	200000.00	\$200,000		varies	25	1	over 20 Years	Annual allowances to maintain as needed
Boiler Room Piping/Valves (Green)	ea								
Heat Exchanger-Steam/Water	5 ea	1000.00	\$5,000		53	40	1	in 1 Year	Steam to Water shell and tube HXs various sizes
Heat Exchanger-Steam/Water (Green)	ea								Allowances to clean and inspect
DHW - Old Building	1 ea	10000.00	\$10,000		8	20	12	in 1 Year	Lochinvar gas-fired 495-MBH
DHW - Old Building (Green)	1 ea	15500.00	\$15,500	\$5,500	8	20	12	E5 in 1 Year	Costs to replace
DHW - Freshman Building	1 ea	10000.00	\$10,000		4	20	16	in 1 Year	Replace with high efficiency condensing boiler
DHW - Freshman Building (Green)	1 ea	15500.00	\$15,500	\$5,500	4	20	16	E5 in 1 Year	Lockinvar gas-fired 495-MBH
DHW Storage - Old Building	2 ea	2000.00	\$4,000		5	10	5 15	in 1 Year	Costs to replace
DHW Storage - Old Building (Green)	2 ea	2500.00	\$5,000	\$1,000	5	25	5	G1 in 1 Year	Lockinvar glass-lined storage tanks
DHW Storage-Freshman Bldg.	1 ea	12466.00	\$12,466		33	20	1	in 1 Year	Upgrade to stainless steel storage tanks
DHW Storage-Freshman Bldg. (Green)	6 ea	2500.00	\$15,000	\$2,534	33	25	1	G1 in 1 Year	≈750-gal storage tank
Domestic Hot/Cold Water	1 ls	20000.00	\$20,000		varies	50	1	over 20 Years	Costs to replace
Domestic Hot/Cold Water (Green)	ea								
Heat-Hydronic Dist Syst	1 ls	100000.00	\$100,000		varies	50	1	over 20 Years	Hydronic Heat distribution. Steam syst antiquated
Heat-Hydronic Dist Syst (Green)	ea								Allowances to maintain
Heat-Steam Dist Syst	1 ls	700000.00	\$750,000		varies	50	1	over 20 Years	Steam tramps, recievers etc.
Estimate pending engineering survey									
Heat-Steam Dist Syst (Green)	1 ea	1000000.00	\$1,000,000	\$250,000	varies	50	1	E2 in 1 Year	Annual allowances to maintain
Auditorium Heat/Ventilation	1 ls	35000.00	\$35,000		???	30	1	in 1 Year	Steam heat fan units
Estimate pending engineering survey									
Auditorium Heat/Ventilation (Green)	1 ls	80000.00	\$80,000	\$45,000	???	30	1	in 1 Year	Replace with hydronic
Miscellaneous	ea								Steam heat fan units
									Replace with gas-fired rooftop packaged HVAC

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
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BOILER ROOM SYSTEMS

Boiler Room Piping/Valves	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$11,593	\$11,941	\$12,299	\$12,668	\$13,048	\$13,439	\$13,842	\$14,258	\$14,685	\$15,126	\$15,580	\$16,047	\$16,528	\$17,024	\$17,535
Boiler Room Piping/Valves (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exchanger-Steam/Water	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exch-Steam/Water(Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Old Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,842	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Old Building (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,456	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Freshman Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
DHW-Freshman Bldg (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,148	\$0	\$0	\$0	\$0
DHW Storage - Old Building	\$0	\$0	\$0	\$0	\$4,502	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,050	\$0	\$0	\$0	\$0	\$0
DHW Storage-Old Bld (Green)	\$0	\$0	\$0	\$0	\$5,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage-Freshman Bldg.	\$12,466	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage-Fresh.Bldg (Green)	\$15,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Domestic Hot/Cold Water	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469	\$1,513	\$1,558	\$1,605	\$1,653	\$1,702	\$1,754
Domestic Hot/Cold Water (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat-Hydronic Dist Syst	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$6,524	\$6,720	\$6,921	\$7,129	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768
Heat-Hydronic Dist Syst (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat-Steam Dist Syst	\$37,500	\$38,625	\$39,784	\$40,977	\$42,207	\$43,473	\$44,777	\$46,120	\$47,504	\$48,929	\$50,397	\$51,909	\$53,466	\$55,070	\$56,722	\$58,424	\$60,176	\$61,982	\$63,841	\$65,756
Heat-Steam Dist Syst (Green)	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Auditorium Heat/Ventilation	\$35,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Auditorium Heat/Ventilation (Green)	\$80,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING MECHANICAL AND ELECTRICAL

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)					Notes		
BUILDING MECHANICAL														
Security Surveillance - CCTV	1 ls	10000.00	\$10,000		10	# 20	1	6	11	16	in	1 Year	Extensive closed circuit television syst (CCTV) Allowances for periodic replacements and upgrades	
Building Fire Suppression	1 ls				≈20	50+							Limited Fire Sprinkler, street pressure system Monitor	
Building Distribution Systems	1 ls	60000.00	\$60,000		varies	50	1				over	20 Years	Sanitary waste & vent system aging Allowances for annual repairs	
Classroom Steam Ventilators	1 ls	1250000.00	\$1,250,000		varies	35	1				over	6 Years	Various ages classroom heat/ventilation units Upgrade to hydronic "Heat Recovery" Models	
Classroom Hydronic Ventilators	1 ls	2250000.00	\$2,250,000	\$1,000,000	varies	35	1				E6	in	1 Year	Estimate includes demo Repl. w/Classroom "Heatpump" ventilators
Building Air Conditioning	3 ea	Average												Split System air conditioners, selected areas
	1 ea	3500.00	\$3,500		varies	20	1	10	20		in	1 Year		Costs to replace condenser units
Building Air Conditioning (Green)	3 ea	Average												
	1 ea	5500.00	\$5,500	\$2,000	varies	20	1	10	20		E7	in	1 Year	Replace w/SEER 18 rated models
Heat/Vent-Gym/Locker Rms	6 ea	15000.00	\$90,000		53	50	1				over	3 Years		Interior mounted ventiation and heat units Costs to replace
Heat/Vent-Gym/Locker Rms (Green)	6 ea	20000.00	\$120,000	\$30,000	53	50	1				E14	in	1 Year	Interior mounted ventilation and heat units Repl with "Heat Recovery" models
Heat/Ventilation-Old Bldg		Average												J. C. roof top ventilators w/hydronic heat
	5 ea	30000.00	\$150,000		53	20	1				over	2 Years		Costs to replace
Heat/Ventilation-Old Bldg (Green)	5 ea	40000.00	\$200,000	\$50,000	53	20	1				E9	over	2 Years	J. C. roof top ventilators w/hydronic heat Repl with "Heat Recovery" models
Exhaust Fans Rooftop	26 ttl													Mushroom type various sizes 24" sq. to 36"sq.
	13 ea	1500.00	\$19,500		varies	15	1	16			in	1 Year		Cost to replace half now and half in future
Exhaust Fans Rooftop (Green)	13 ea	2250.00	\$29,250	\$9,750	varies	15	1	16			in	1 Year		Upgrade to premium duty motors

BUILDING ELECTRICAL

Building Power Wiring	1 ls	500000.00	\$500,000		varies	99	1				over 5 Years	Ages and brands of manufacture vary Allowances to upgrade as needed
Emergency Generator	1 ea				30±	35						Onan 7.5 kW gas-fired generator for Town telephone syst.
Emergency Lights	1 ls	25000.00	\$25,000		varies	10	1	11			over 10 Years	Mix of wet battery and dry battery units Annual allowances to repair/replace
Smoke / Fire Detection	2 ls	167000.00	\$334,000		2	20	18				in 1 Year	Addressable systems Future replacement costs
	1 ea	167000.00	\$167,000		2	20	18				in 1 Year	Zoned system Older bldg. Replacement costs.
Smoke / Fire Detection	1 ls	25000.00	\$25,000		2	20	1				in 1 Year	Allow to repl field devices/upgrade to addressable

BUILDING ELEVATORS

Existing Elevator System	1 ea				100	35						Atlas hydraulic-type elevator Maintained by a full service contract
Cabs	1 ea	75000.00	\$75,000		33	20	1				in 1 Year	Allowance to upgrade cab/door operators Provide additional access to Old/Freshman Bldgs.
Add Elevators, Impv. ADA Access	2 ea	225000.00	\$450,000		ADD	35	1				in 1 Year	Estimated costs to add additional elevators Hydromechanical package/controls
Machine Room Equipment	1 ea	85000.00	\$85,000		33	35	1				in 1 Year	Costs to replace

BUILDING MECHANICAL AND ELECTRICAL

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
BUILDING MECHANICAL																				
Security Surveillance - CCTV	\$10,000	\$0	\$0	\$0	\$0	\$11,593	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
Building Fire Suppression	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Distribution Systems	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377	\$3,478	\$3,582	\$3,690	\$3,800	\$3,914	\$4,032	\$4,153	\$4,277	\$4,406	\$4,538	\$4,674	\$4,814	\$4,959	\$5,107	\$5,261
Classroom Steam Ventilators	\$208,333	\$214,583	\$221,021	\$227,651	\$234,481	\$241,515	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Classroom Hydronic Ventilators	\$2,250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Air Conditioning	\$3,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,567	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,137
Building Air Conditioning (Green)	\$5,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,644
Heat/Vent-Gym/Locker Rms	\$30,000	\$30,900	\$31,827	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Vent-Gym/Locker Rms (Green)	\$120,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Ventilation-Old Bldg	\$75,000	\$77,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Ventilation-Old Bldg (Green)	\$100,000	\$103,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exhaust Fans Rooftop	\$19,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,380	\$0	\$0	\$0	\$0
Exhaust Fans Rooftop (Green)	\$29,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,571	\$0	\$0	\$0	\$0
BUILDING ELECTRICAL																				
Building Power Wiring	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Generator	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Lights	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262	\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$4,132	\$4,256	\$4,384
Smoke / Fire Detection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$552,051	\$0	\$0
Smoke / Fire Detection	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$276,026	\$0	\$0
Existing Elevator System	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabs	\$75,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Elevators, Impv. ADA Access	\$450,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Machine Room Equipment	\$85,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
STRUCTURE									
Foundation	2,828 lf				varies	100+			Concrete - Isolated area of spalling noted at auditorium & parging failing, parts of freshman bldg courtyard area: Repair allowances incl. with exterior walls
Boiler Room Floor-Old Buildings	1 ls 11 ea	45000.00	\$45,000		0	1	1	in 1 Year	Water infil. allowance for hydrostatic testing
Stairs - Masonry	1 ls	40000.00	\$40,000		varies	100+	1	over 20 Years	Concrete/granite, at rear of older bldg portion exhibit most wear. Annual repair allowances
Stairs - Wood	3 ea	3500.00	\$10,500		33	33	1	in 1 Year	Pressure treated wood at cafeteria courtyard Costs to replace
BUILDING EXTERIOR									
Exterior Common Doors	68 ea	2500.00	\$170,000		33	35	1	over 3 Years	Wood/metal & aluminum/glass doors Costs to replace
Exterior Common Doors (Green)	68 ea	3500.00	\$238,000	\$68,000	33	35	1	E11 over 3 Years	Wood/metal & aluminum/glass doors Upgrade with efficient lower U-value fiberglass
Service Doors	26 ea	1200.00	\$31,200		33	35	1	over 3 Years	Single/double leaf steel doors & overhead doors Costs to replace
Service Doors (Green)	26 ea	1500.00	\$39,000	\$7,800	33	35	1	E11 over 3 Years	Single/double leaf steel doors & overhead doors Repl w/insulated fiberglass models
Glass Sliding Doors	1 ea	2500.00	\$2,500		33	35	1	in 1 Year	Aluminum framed door at courtyard by cafeteria Costs to replace
Glass Sliding Doors (Green)	1 ea	3500.00	\$3,500	\$1,000	33	35	1	E12 in 1 Year	Aluminum framed door at courtyard by cafeteria Replace with insulated fiberglass model
Clock Steeple	1 ls	65000.00	\$65,000		100	20	1	in 1 Year	Clock steeple, old bldg. cosmetic/structural deterioration. Allowance to historically restore
Hazardous Material Abatement	1 ls	10000000.00	\$10,000,000		100	100	1	in 1 Year	Allowance to ab ate all areas
Exterior Walls-Brick Masonry	108,806 ttl sf 27,202 sf	8.00	\$217,616		100	6	7 13 19	in 1 Year	Recent repointing/waterproofing work done. Allowances for future cycles @25% of total
Exterior Walls-Brick Masonry (Green)	sf								
Exterior Walls-Block Masonry	37,436 ttl sf 18,718 sf	8.00	\$149,744		33	15	5 20	in 1 Year	Freshman bldg/connector recent joint caulking Future allow for repointing/waterproofing @50%
Exterior Walls-Block Masonry (Green)	sf								
Trim, Soffit, Fascia	1 ls	25000.00	\$25,000		10	10	1 11	in 1 Year	Painted cornice & columns at older portion of bldg, Allowances to repair, scrape & paint.
Faux Balcony-Main Entry	1 ls	25000.00	\$25,000		100	20	1 19	in 1 Year	Balcony over main entry at front of bldg; Allowances for historic restoration
Faux Balcony-Main Entry (Green)	lf								
Exterior Ceilings	2,080 sf 17 ttl				33	60			Stained & sealed natural wood at link section Operating
Building Mounted Lighting	15 ea	1250.00	\$18,750		varies	20	1	over 3 Years	High intensity discharge (HID) fixtures, some LED Costs to replace
Building Mounted Lighting (Green)	15 ea	1650.00	\$24,750	\$6,000	varies	20	1	E1 over 3 Years	High intensity discharge (HID) fixtures, some LED Replace all with long life efficient LED fixtures

Arlinton High School
BUILDING ARCHITECTURE

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
STRUCTURE																				
Foundation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boiler Room Floor-Old Buildings	\$45,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stairs - Masonry	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251	\$2,319	\$2,388	\$2,460	\$2,534	\$2,610	\$2,688	\$2,768	\$2,852	\$2,937	\$3,025	\$3,116	\$3,209	\$3,306	\$3,405	\$3,507
Stairs - Wood	\$10,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
BUILDING EXTERIOR																				
Exterior Common Doors	\$56,667	\$58,367	\$60,118	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Common Doors (Green)	\$79,333	\$81,713	\$84,165	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Doors	\$10,400	\$10,712	\$11,033	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Doors (Green)	\$13,000	\$13,390	\$13,792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors (Green)	\$3,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Clock Steeple	\$65,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Haz Mat Abatement	\$10,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls-Brick Masonry	\$0	\$0	\$0	\$0	\$0	\$0	\$259,845	\$0	\$0	\$0	\$0	\$0	\$310,268	\$0	\$0	\$0	\$0	\$0	\$370,477	\$0
Ext Walls-Brick Msrny (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls-Block Masonry	\$0	\$0	\$0	\$0	\$168,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$262,577
Ext Walls-Brick Msrny (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Trim, Soffit, Fascia	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Faux Balcony-Main Entry	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$42,561	\$0
Faux Balc-Main Entry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Mounted Lighting	\$6,250	\$6,438	\$6,631	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bldg Mounted Lghtng (Green)	\$8,250	\$8,498	\$8,752	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)	Notes
BUILDING EXTERIORS (cont.)								
Windows - Older	371 ea	Average 2725.00	\$1,010,975		53+	35	1 over 3 Years	Steel/wood framed double-hung & casement style windows, no double-glazing; Replacement costs
Windows - Older (Green)	371 ea	Average 3000.00	\$1,113,000	\$102,025	53+	40	1 E12 over 3 Years	Steel/wood framed double-hung & casement style Install insulated, fiberglass fr, dbl glazed, low-E
Windows - Newer	565 ea	Average 2725.00	\$1,539,625		34	35	1 over 3 Years	Aluminum fr fixed panel & awning style windows Costs to replace
Windows - Newer (Green)	565 ea	Average 3000.00	\$1,695,000	\$155,375	34	40	1 E12 over 3 Years	Aluminum fr fixed panel & awning style windows Install insulated, fiberglass fr, dbl glazed, low-E
Window Caulking	936 ea	75.00	\$70,200		Future	10	15 over 6 Years	Window edge weather caulking Allowance for future replacement
Window Caulking (Green)	ea							
Window Sills/Lintels	936 ea	75.00	\$70,200		varies	10	1 11 over 6 Years	Rusted lintels at most windows; Scrape & paint Several spalled/deteriorated concrete sills; Replace
Unit Balconies	ea							
Unit Balconies (Green)	ea							
Unit Patios	ea							
Unit Patios (Green)	ea							
Miscellaneous	ea							
Miscellaneous (Green)	ea							
ROOF SYSTEMS								
Structure	122,544 sf				100	50		Mix of flat and pitched surfaces Monitor
Roof Covering - Membrane	79,278 sf	14.50	\$1,149,531		13	25	12 in 1 Year	Thermoplastic Polyolefin membrane roofing (T.P.O.) Future replacement costs
Roof Covering - Membrane (Green)	sf							
Roof Covering - Membrane	25,092 sf	14.50	\$363,834		5	25	20 in 1 Year	Thermoplastic Polyolefin membrane roofing (T.P.O.) Future replacement costs
Roof Covering - Membrane (Green)	sf							
Roof Covering - Slate	7,452 sf 1 ls	15000.00	\$15,000		33	4	1 5 9 13 17 over 4 Years	Slate shingles, isolated cracked/missing slates Annual repair allowances
Roof Covering Metal	10,722 sf 1 ea	10000.00	\$10,000		33	60+	1 11 16 in 1 Year	Standing seam at Blue Gym, connector, & link. Blow-off sections noted. Periodic repair allowances
Chimneys	2 ea				100	20		Brick chimneys Needs included with exterior walls

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
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BUILDING EXTERIORS (cont.)

Windows - Older	\$336,992	\$347,101	\$357,514	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Older (Green)	\$371,000	\$382,130	\$393,594	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Newer	\$513,208	\$528,605	\$544,463	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Newer (Green)	\$565,000	\$581,950	\$599,409	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Caulking	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,697	\$18,228	\$18,775	\$19,338	\$19,918	\$20,516
Window Caulking (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Sills/Lintels	\$11,700	\$12,051	\$12,413	\$12,785	\$13,168	\$13,564	\$0	\$0	\$0	\$0	\$15,724	\$16,196	\$16,681	\$17,182	\$17,697	\$18,228	\$0	\$0	\$0	\$0
Unit Balconies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Balconies (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

ROOF SYSTEMS

Structure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Membrane	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,591,220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Cov-Membrane (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Membrane	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$637,985
Roof Cov-Membrane (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Slate	\$3,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893	\$5,040	\$5,191	\$5,347	\$5,507	\$5,672	\$5,842	\$6,018	\$6,198	\$6,384	\$6,576
Roof Covering Metal	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
Chimneys	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes
HALLS											
	119,207 ttl sf										Glazed/painted masonry & drywall w/acoustic tile
Hallway Walls and Ceilings	101,277 sf	0.90	\$91,149		varies	10	1	11		over 3 Years	above lockers: Costs to maintain painted surfaces
Hallway Walls and Ceilings (Green)	101,277 sf	0.90	\$91,149	\$0	varies	10	1	11		over 3 Years	Glazed/painted masonry & drywall w/acoustic tile above lockers: Spaecify low-VOC content paint
	29,557 sf	5.00	\$147,785		0	15	15			over 15 Years	Future annual replacement cycle
Hallway Floors	29,557 sf	5.00	\$147,785		33	15	1			over 3 Years	VCT poor condition Costs to replace all
Hallway Floors (Green)	29,557 sf	6.50	\$192,121	\$44,336	33	25	1		G2	over 3 Years	Existing VCT poop condition Replace with natural linoleum flooring
Hallway Doors	62 ea	2500.00	\$155,000		33/53	30	1			over 3 Years	Steel fire doors in steel frames most failing Costs to replace
Hallway Doors (Green)	sf										
Building Interior Lighting	1 ls	750000.00	\$750,000		varies	20	1			over 3 Years	Ceiling mounted/hung fluorescent fixtures. Most old Costs to replace
Building Interior Lighting (Green)	1 ls	1000000.00	\$1,000,000	\$250,000	varies	20	1		E13	over 3 Years	Ceiling mounted/hung fluorescent fixtures. Most old Install LED long-life efficient LED fixtures
Hallway Heating	ea										
Hallway Heating (Green)	ea										
Lockers	Estimate 2,000 ea	350.00	\$700,000		varies	35	1			over 3 Years	Steel lockers throughout facility Costs to replace
Miscellaneous	ea										
Miscellaneous (Green)	ea										
STAIRS											
	26,916 ttl sf										Glazed/painted masonry & drywall w/acoustic tile
Stair Walls and Ceilings	18,353 sf	0.90	\$16,518		varies	10	1	11		over 3 Years	Costs to maintain painted surfaces
Stair Walls and Ceilings (Green)	18,353 sf	0.90	\$16,518	\$0	varies	10	1	11		over 3 Years	Glazed/painted masonry & drywall w/acoustic tile Specify low-VOC content paint
Stair Floors	7,886 sf	20.00	\$157,720		varies	20	1			over 20 Years	Rubber stair treads Costs to replace as needed
Stair Floors (Green)	sf										
Stair Interior Lighting	ea										
Stair Interior Lighting (Green)	ea										
Stair Doors	64 ea	2500.00	\$160,000		varies	35	1			over 3 Years	Steel fire doors in steel frames most failing Costs to replace
Stair Railings	1 ea				varies	10					Steel railings and balustrades Periodic painting included with walls

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
HALLS																				
Hallway Walls and Ceilings	\$30,383	\$31,295	\$32,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,832	\$42,057	\$43,319	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls & Ceilings (Green)	\$30,383	\$31,295	\$32,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,832	\$42,057	\$43,319	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Floors	\$49,262	\$50,740	\$52,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,903	\$15,350	\$15,810	\$16,284	\$16,773	\$17,276
Hallway Floors (Green)	\$64,040	\$65,961	\$67,940	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Doors	\$51,667	\$53,217	\$54,813	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Doors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Interior Lighting	\$250,000	\$257,500	\$265,225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bld Int Lighting (Green)	\$333,333	\$343,333	\$353,633	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lockers	\$233,333	\$240,333	\$247,543	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STAIRS																				
Stair Walls and Ceilings	\$5,506	\$5,671	\$5,841	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,399	\$7,621	\$7,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Walls and Ceilings (Green)	\$5,506	\$5,671	\$5,841	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,399	\$7,621	\$7,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Floors	\$7,886	\$8,123	\$8,366	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289	\$10,598	\$10,916	\$11,244	\$11,581	\$11,928	\$12,286	\$12,655	\$13,034	\$13,425	\$13,828
Stair Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Doors	\$53,333	\$54,933	\$56,581	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Railings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--*continued*

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
CLASSROOMS									Painted surfaces	
Walls & Ceilings	133,958 sf	0.90	\$120,562		varies	10	1	11	over 3 Years	Repainting allowances
Walls & Ceilings (Green)	133,958 sf	0.90	\$120,562	\$0	varies	10	1	11	over 3 Years	Painted surfaces Specify low-VOC content paint
	42,302 sf	5.00	\$211,510		0	15	10		over 15 Years	Future replacement cycles
Floors	42,320 sf	5.00	\$211,600		33+	15	1		over 3 Years	VCT poor condition Costs to replace
Floors (Green)	42,302 sf	6.50	\$274,963	\$63,363	100	25	1		G2 over 3 Years	VCT poor condition Replace with natural linoleum
Cabinetry	1 ls	Estimate 500000.00	\$500,000		33+	30	1		over 3 Years	Wood storage cabinets in classrooms Costs to replace
Cabinetry (Green)	1 ls									
Cabinetry	1 ls	Estimate 100000.00	\$100,000		33+	30	1		over 3 Years	Wood counters along windows in several classrooms, Costs to replace
Cabinetry (Green)	1 ls									
Science/Lab Fixtures	1 ls	Estimate 750000.00	\$750,000		varies	20	1		over 3 Years	Assumed upgrade to current standards Discuss during client review
Science/Lab Fixtures (Green)	1 ea									
INDUSTRIAL ARTS CLASSROOMS										Painted brick, concrete, and concrete block
Walls/Cielings	30,768 sf	0.90	\$27,691		varies	10	1	11	over 3 Years	Costs for periodic painting
Walls/Cielings (Green)	30,768 ea	0.90	\$27,691	\$0	varies	10	1	11	over 3 Years	Painted brick, concrete, and concrete block Specify low-VOC content paint
Floors	11,625 sf	1.50	\$17,438		varies	10	1	11	over 3 Years	Painted concrete Paint concurrent with walls
Floors (Green)	11,625 sf	1.50	\$17,438	\$0	varies	10	1	11	over 3 Years	Painted concrete Specify low-VOC content paint
MEDIA CENTER										Painted surfaces
Walls/Ceiling	29,869 sf	0.90	\$26,882		10	10	1	11	in 1 Year	Repainting cycles
Walls/Ceiling (Green)	29,869 sf	0.90	\$26,882	\$0	10	10	1	11	in 1 Year	Painted surfaces Specify low-VOC content paint
Floor Covering	6,489 ea	4.00	\$25,956		10	10	1	11	in 1 Year	Carpet Replacement cycles
Floor Covering (Green)	6,489 ea	5.00	\$32,445	\$6,489	10	10	1	11	G3 in 1 Year	Carpet Install CRI Green Label Plus Carpet
Furniture	1 ls	100000.00	\$100,000		10	20	10		over 3 Years	Various tables, chairs, bookshelf's, etc. Allowances to replace
Miscellaneous	1 ea									
Miscellaneous	1 ea									

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
CLASSROOMS																				
Walls & Ceilings	\$40,187	\$41,393	\$42,635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,009	\$55,629	\$57,298	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls & Ceilings (Green)	\$40,187	\$41,393	\$42,635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,009	\$55,629	\$57,298	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$70,533	\$72,649	\$74,829	\$0	\$0	\$0	\$0	\$0	\$0	\$18,398	\$18,950	\$19,519	\$20,104	\$20,707	\$21,329	\$21,968	\$22,627	\$23,306	\$24,005	\$24,726
Floors (Green)	\$91,654	\$94,404	\$97,236	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0																				
Cabinetry	\$166,667	\$171,667	\$176,817	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry	\$33,333	\$34,333	\$35,363	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Science/Lab Fixtures	\$250,000	\$257,500	\$265,225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Science/Lab Fixtures (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Cielings	\$9,230	\$9,507	\$9,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,405	\$12,777	\$13,160	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Cielings (Green)	\$9,230	\$9,507	\$9,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,405	\$12,777	\$13,160	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$5,813	\$5,987	\$6,166	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,812	\$8,046	\$8,287	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$5,813	\$5,987	\$6,166	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,812	\$8,046	\$8,287	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceiling	\$26,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,127	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceiling (Green)	\$26,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,127	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering	\$25,956	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,883	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering (Green)	\$32,445	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,603	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Furniture	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,492	\$44,797	\$46,141	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit 2014.00	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes
GYMNASIUMS / LOCKER ROOMS											
	<i>Estimate</i>										Steel lockers assemblies, good overall condition
Lockers	500 ea	350.00	\$175,000		33	35	2		in	1 Year	Costs to replace
Shower Partitions	1 ls	100000.00	\$100,000		33	20+	1		over	5 Years	Metal partitions, areas of minor surface rust noted Costs to replace with PVC types
Miscellaneous	0 ea										
Walls and Ceilings	76,773 sf	0.90	\$69,096		10	10	1 11		over	3 Years	Painted surfaces Repainting cycles
Walls and Ceilings (Green)	76,773 sf	0.90	\$69,096	\$0	10	10	1 11		over	3 Years	Painted surfaces Specify low-VOC content paint
Gym Floors	17,105 sf	18.35	\$313,877		10	20	10		in	1 Year	Rubber sheet goods, includes weight room Costs to replace
Gym Floors (Green)	sf										
Locker Room Floors	4,907 ttl 2,944 sf	0.90	\$2,650		5	5	1 6 11 16		in	1 Year	Painted concrete at lockers/ceramic tile at showers Costs to paint concrete - Tile from operating
Locker Room Floors (Green)	4,907 sf 2,944 sf	0.90	\$2,650	\$0	5	5	1 6 11 16		in	1 Year	Painted concrete at lockers/ceramic tile at showers Specify low-VOC content paint
CAFETERIA / KITCHEN											
Walls/Ceilings	22,555 sf	1.50	\$33,833		10	10	1 11		over	3 Years	Painted surfaces/Acoustical ceiling tile Costs to paint and replace ceiling tile
Walls/Ceilings (Green)	22,555 sf	1.50	\$33,833	\$0	10	10	1 11		over	3 Years	Painted surfaces/Acoustical ceiling tile Specify low-VOC content paint
Floor Covering	8,200 ea	5.00	\$41,000		15	15	1 16		over	3 Years	VCT, poor condition Costs to replace
Floor Covering (Green)	8,200 ea	6.50	\$53,300	\$12,300	15	25	1	G2	over	3 Years	VCT, poor condition Repalce with natural linoleum
Kitchen Equipment	1 ls	100000.00	\$100,000		varies	20	1		over	20 Years	Commercial stainless steel Appliances/equipment Annual allowances to replace as needed
Kitchen Equipment (Green)	ea										
Folding Tables	1 ls	350000.00	\$350,000		10	20	10		in	1 Year	Folding metal tables Costs to replace
AUDITORIUM											
Walls	9,851 ea				varies	20					Acoustic wood panels w/small areas of painted drywall Maintain from operating
Walls (Green)	ea										
Ceilings	9,851 ea	0.90	\$8,866		10	10	1 11		in	1 Year	Painted surfaces Repainting cycles
Ceilings (Green)	9,851 ea	0.90	\$8,866	\$0	10	10	1 11		in	1 Year	Painted surfaces Specify low-VOC content paint
Floors - Stage	981 ea				5	5					Laminated wood panels on stage Replaced as needed from operating

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
GYMNASIUMS / LOCKER ROOMS																				
Lockers	\$0	\$180,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Shower Partitions	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls and Ceilings	\$23,032	\$23,723	\$24,435	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,953	\$31,882	\$32,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls and Ceilings (Green)	\$23,032	\$23,723	\$24,435	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,953	\$31,882	\$32,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Gym Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$409,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Gym Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Room Floors	\$2,650	\$0	\$0	\$0	\$0	\$3,072	\$0	\$0	\$0	\$0	\$3,561	\$0	\$0	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0
Locker Room Floors (Green)	\$2,650	\$0	\$0	\$0	\$0	\$3,072	\$0	\$0	\$0	\$0	\$3,561	\$0	\$0	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0
CAFETERIA / KITCHEN																				
Walls/Ceilings	\$11,278	\$11,616	\$11,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,156	\$15,611	\$16,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings (Green)	\$11,278	\$11,616	\$11,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,156	\$15,611	\$16,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering	\$13,667	\$14,077	\$14,499	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,292	\$21,931	\$22,589	\$0	\$0
Floor Covering (Green)	\$17,767	\$18,300	\$18,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Equipment	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$6,524	\$6,720	\$6,921	\$7,129	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768
Kitchen Equipment (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Folding Tables	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$456,671	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings	\$8,866	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings (Green)	\$8,866	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors - Stage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes	
AUDITORIUM - continued												
Floors	2,341 sf	4.00	9,364		15	15	1	16		in 1 Year	Sealed concrete under seats, routine maintenance	
Floors (Green)	2,341 sf	5.00	11,705	\$2,341	15	15	1	16	G3	in 1 Year	Carpet aisle runners & area in front of stage; Repl. costs	
Seats	800± ttl 20 ea	300.00	6,000		varies	20+	1	6	11	16	in 1 Year	Carpet aisle runners & area in front of stage; Install CRI Green Label Plus Carpet
Seats (Green)	ea											Wood veneer seats, peeling veneer & minor damage; Periodic replacement allowances
RESTROOMS												
Walls	13,272 sf 5,972 ea	0.90	5,375		10	10	11			over 3 Years		Mix of ceramic tile, glazed block, & painted surfaces
Walls (Green)	5,972 ea	0.90	5,375	\$0	10	10	11			over 3 Years		First cycle included with ADA Repainting cycles
Ceilings	3,197 ea	0.90	2,877		10	10	11			over 3 Years		Mix of ceramic tile, glazed block, & painted surfaces
Ceilings (Green)	3,197 ea	0.90	2,877	\$0	10	10	11			over 3 Years		Specify low-VOC content paint
Floors	3,197 ea				varies	60						Painted surfaces
Floors (Green)	ea											First cycle included with ADA Repainting cycles
Fixtures & Accessories	1 ls				varies	20+						Painted surfaces
Fixtures & Accessories (Green)	ea											Specify low-VOC content paint
Toilet Partitions	1 ea				varies	20+						Ceramic tile
Toilet Partitions (Green)	ea											Included with ADA Upgrade
SCHOOL OFFICES / SUPPORT SPACES / STORAGE												
Walls/Ceilings	97,687 ea	0.90	87,918		10	10	1	11		over 3 Years		Painted surfaces
Walls/Ceilings (Green)	97,687 ea	0.90	87,918	\$0	10	10	1	11		over 3 Years		Repainting cycles
Floors	15,776 ea	5.00	78,880		15	15	1	16		over 3 Years		Painted surfaces
Floors (Green)	15,776 ea	6.50	102,544	\$23,664	15	25	1		G2	over 3 Years		Specify low-VOC content paint
Miscellaneous	ea											VCT
Miscellaneous	ea											Replacement cycles
Miscellaneous	ea											VCT
Miscellaneous (Green)	ea											Install natural linoleum

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
AUDITORIUM - continued																				
Floors	\$9,364	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,589	\$0	\$0	\$0	\$0
Floors (Green)	\$11,705	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,236	\$0	\$0	\$0	\$0
Seats	\$6,000	\$0	\$0	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0	\$8,063	\$0	\$0	\$0	\$0	\$9,348	\$0	\$0	\$0	\$0
Seats (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,408	\$2,480	\$2,554	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,408	\$2,480	\$2,554	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,289	\$1,328	\$1,367	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,289	\$1,328	\$1,367	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fixtures & Accessories	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fixtures & Accessories (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilet Partitions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilet Partitions (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings	\$29,306	\$30,185	\$31,091	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,385	\$40,566	\$41,783	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings (Green)	\$29,306	\$30,185	\$31,091	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,385	\$40,566	\$41,783	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$26,293	\$27,082	\$27,895	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,964	\$42,193	\$43,459	\$0	\$0
Floors (Green)	\$34,181	\$35,207	\$36,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes	
SCHOOL DEPARTMENT OFFICES												
											Painted surfaces	
Wall / Ceilings	7,373 ea	0.90	\$6,636		10	10	1	11		in	1 Year	Repainting cycles
												Painted surfaces
Wall / Ceilings (Green)	7,373 ea	0.90	\$6,636	\$0	10	10	1	11		in	1 Year	Specify low-VOC content paint
												Carpet
Floors	15,776 ea	4.00	\$63,104		varies	10	1	11		in	1 Year	Replacement cycles
												Carpet
Floors (Green)	15,776 ea	5.00	\$78,880	\$15,776	varies	10	1	11	G3	in	1 Year	Install CRI Green Label Plus carpet
												VCT
Floors	359 lf	5.00	\$1,795		15	15	1	16		in	1 Year	Replacement cycles
												VCT
Floors (Green)	359 lf	6.50	\$2,334	\$539	15	25	1		G2	in	1 Year	Install natural linoleum
	ea											
	ea											
	ea											
	ea											
	ea											
	ea											

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
SCHOOL DEPARTMENT OFFICES																				
Wall / Ceilings	\$6,636	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,918	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Wall / Ceilings (Green)	\$6,636	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,918	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$63,104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$84,806	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$78,880	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$106,008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$1,795	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,797	\$0	\$0	\$0	\$0
Floors (Green)	\$2,334	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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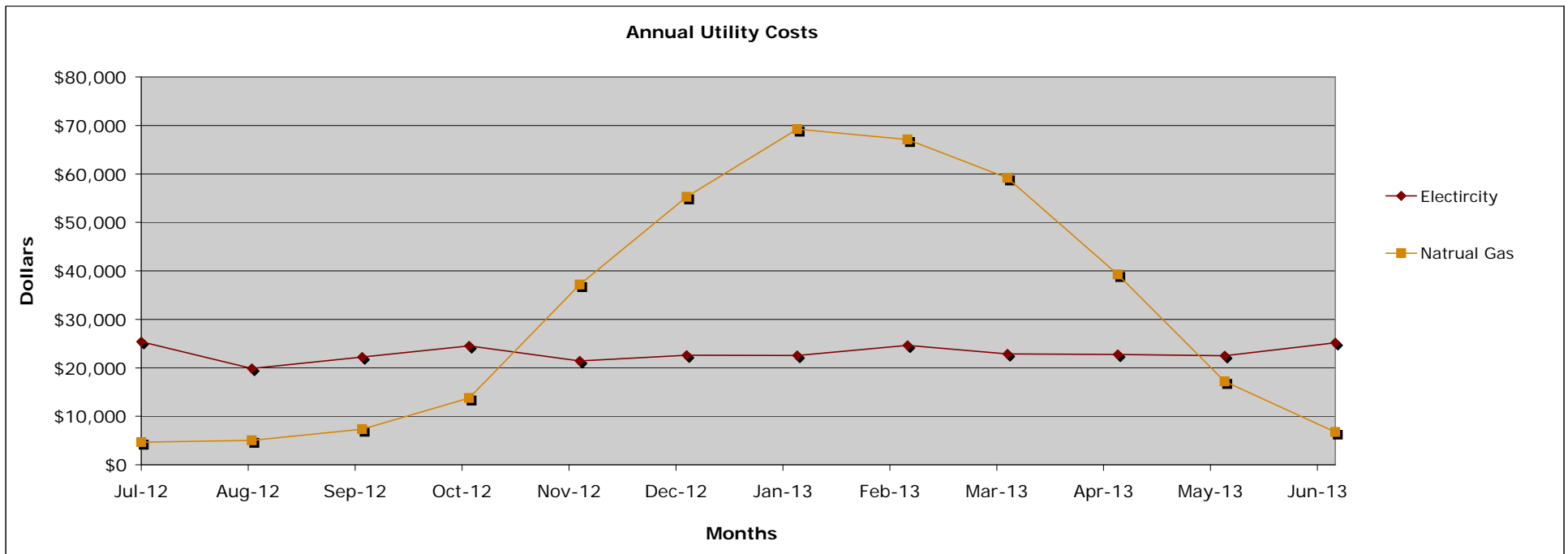
Energy Analysis

Utility Usage

Arlington High School

The energy analysis portion of this Energy Audit examines utility bills for the most recent 12 months to summarize at electricity, natural gas, and water/sewer use. The following table and charts show the utility information by utility source, and by monthly and annual consumption.

	ELECTRICITY		NATURAL GAS		WATER / SEWER				OIL		TOTAL
	kWh	\$	Therms	\$	Gallons	Water \$	Sewer \$	Total \$	Gallons	\$	
Jun-13	142,164	\$25,156	6,525	\$6,744							\$31,899
May-13	131,404	\$22,465	22,692	\$17,165							\$39,631
Apr-13	134,844	\$22,763	49,540	\$39,255							\$62,018
Mar-13	132,924	\$22,882	70,477	\$59,162							\$82,044
Feb-13	146,044	\$24,633	80,982	\$67,080							\$91,713
Jan-13	137,444	\$22,522	69,263	\$69,259							\$91,781
Dec-12	132,444	\$22,584	52,989	\$55,239							\$77,823
Nov-12	128,724	\$21,431	32,560	\$37,149							\$58,579
Oct-12	130,284	\$24,521	9,044	\$13,766							\$38,287
Sep-12	110,764	\$22,236	7,119	\$7,333							\$29,569
Aug-12	105,844	\$19,884	7,058	\$5,056							\$24,940
Jul-12	118,284	\$25,359	6,500	\$4,680							\$30,039
Total	1,551,168	\$276,435	414,749	\$381,889							\$658,324
<i>Unit Cost</i>		<i>\$0.178</i>		<i>\$0.9208</i>							

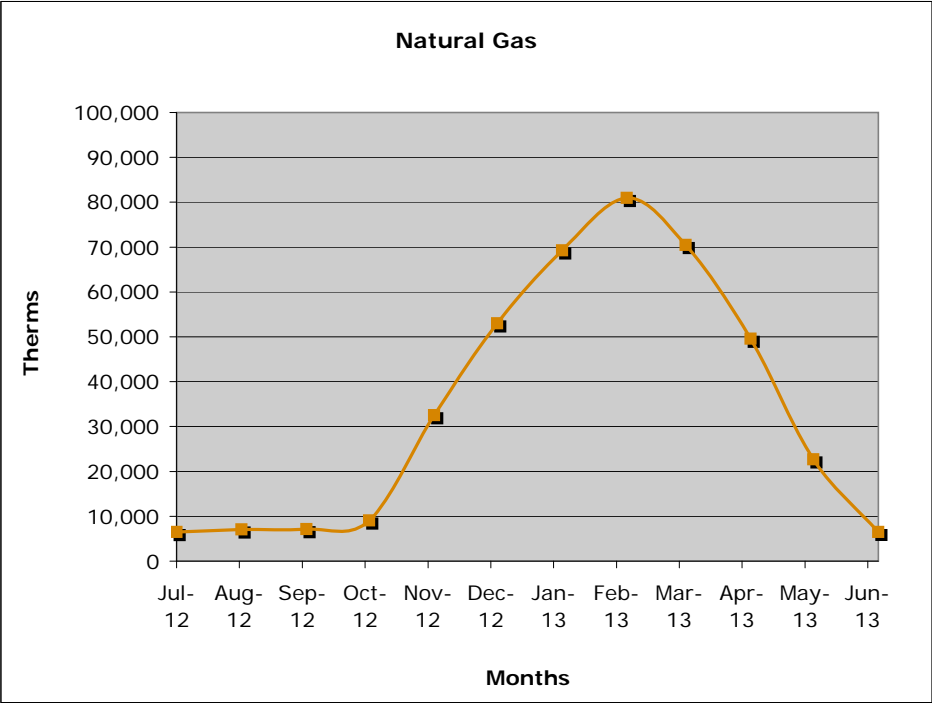
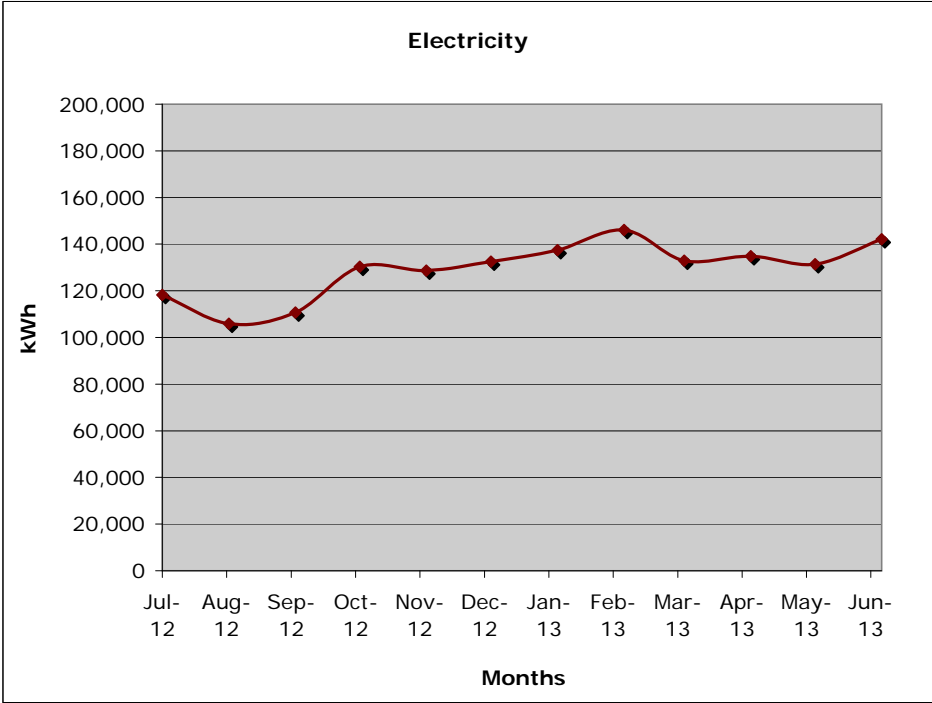


Energy Analysis

Utility Usage, By Type

Arlington High School

Below are graphic presentations of annual usage by utility type for the property.



Energy Assumptions Table

Below are the energy assumptions by category that were used as inputs for the TREAT model for the property.

These energy assumptions are based on the following:

1. The physical inspection of the property
2. Diagnostic testing conducted during the inspection
3. The historic utility billing information
4. The building blueprints/plans
5. Information provided by site management and maintenance staff

General

Property Type (Family, Elderly, Commercial): **Institutional**
 Resident Population Persons: **≈750**

Space Types

Hallways/Stairwells	Square Footage:	37,443	Conditioned:	Yes
Classrooms	Square Footage:	53,945	Conditioned:	Yes
Support/Offices	Square Footage:	276,244	Conditioned:	Yes

Utility Metering

Whole Building	Utility Type:	Electricity	Individual, Master:	Master
Whole Building	Utility Type:	Natural Gas	Individual, Master:	Master
Whole Building	Utility Type:	Water/Sewer	Individual, Master:	Town

Infiltration

Infiltration Condition	Tight, Leaky:	Leaky
Infiltration Rate	ACH:	1

Architectural

Wall Insulation	Type:	None	R-Value:	R-4
Roof Insulation	Type:	Cellulose	R-Value:	R-10
Exterior Doors 1	Type:	Metal/Glass	R-Value:	< R-5
Exterior Doors 2	Type:	Wood/Glass	R-Value:	< R-5
Windows 1	Type:	Aluminum	U-Factor:	1.27
Windows 2	Type:	Wood	U-Factor:	0.87
Windows 3	Type:	Steel	U-Factor:	1.27

Heating and Cooling

Temperature Control:

Occupied Heating Temp	Degrees F:	72
Occupied Cooling Temp	Degrees F:	N/A
Unoccupied ¹ Heating Temp	Degrees F:	N/A
Unoccupied ¹ Heating Time	Hours / Day:	N/A

Boilers / DHW Generation:

Boiler 1 Old Building	Type:	Gas, Steam	Capacity:	3000 MBH	Efficiency:	≈70%
Boiler 2 Freshman Bldg.	Type:	Gas, Steam	Capacity:	3000 MBH	Efficiency:	≈70%
Domestic Hot Water 1	Type:	Gas-Fired	Capacity:	520 MBH	Efficiency:	≈80%

¹Unoccupied temps/times based on opportunity for savings based on programmable thermostats

Water & Sewer

Domestic Hot Water:

DHW Daily Usage	Gallons/Resident:	Unknown
DHW Delivery Temp	Degrees F:	120

Domestic Cold Water:

Showerheads	Gallons / Minute:	2.5
Toilets	Gallons / Flush:	2.5-3
Irrigation	Gallons / Year:	None

Lighting Loads

Hallway/Stairs	Type:	Fluorescent	Wattage:	64	Hours per Day:	12
Classrooms	Type:	Fluorescent	Wattage:	64	Hours per Day:	12
Common Kitchen	Type:	Fluorescent	Wattage:	64	Hours per Day:	12
Exit Lighting	Type:	LED	Wattage:	7	Hours per Day:	24
Support/Office	Type:	Fluorescent	Wattage:	64	Hours per Day:	12
Exterior	Type:	Metal Halide	Wattage:	250-500	Hours per Day:	12

Simple Payback Analysis

EWCM #1 Upgrade Exterior Lighting

Replacement Costs

Total costs to convert from HID types to LED types

\$45,250.00

Utility Cost

Electricity: \$0.178
Natural Gas: \$0.921

Existing Types / Usage

Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1: High Intensity Discharge	500	25	12	365	54,750	\$9,745.50
Type 2:					0	\$0.00
Type 3:					0	\$0.00
Type 4:					0	\$0.00
Type 5:					0	\$0.00
Total:					54,750	\$9,745.50

Proposed Green Types / Usage

Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1: Comparable LED Fixtures	70	25	12	365	7,665	\$1,364.37
Type 2:					0	\$0.00
Type 3:					0	\$0.00
Type 4:					0	\$0.00
Type 5:					0	\$0.00
Total:					7,665	\$1,364.37

Annual Electric Savings

160,654,020 BTUs
47,085.00 kWh
Savings = 47,085.00 x \$0.18 = \$8,381.13/yr

Annual Natural Gas Savings¹

0 BTUs
0.00 therms
Savings = 0.00 x \$0.92 = \$0.00/yr

Annual Net Cost Savings

\$8,381.13 + \$0.00 = \$8,381.13

5. Simple Payback

\$45,250.00 / \$8,381.13 = 5.40 yrs

Additional Notes/Comments:

Exterior lighting, no heat gain/loss from fixtures.

Simple Payback Analysis

EWCM #2 Upgrade Freshman Building Boilers

2 boilers provide steam heat to the High School, one was recently replaced. Upgrade the older boiler with high efficiency model. Convert the new boiler to hydronic

Replacement Costs		Type	Cost
A. Proposed Conventional:		Replacement of older boilers	\$220,000.00
B. Proposed Green:		High-efficiency boiler	\$334,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$114,000.00

Boiler Efficiencies	
A. Existing Efficiency:	75%
B. Conventional Efficiency:	75%
C. Green Efficiency:	96%

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	35,041,843.832 btus
		372428.41 therms	372428.41 therms	350418.44 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$322,735.38

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$322,735.38	= \$20,271.19 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$20,271.19	= \$20,271.19 /yr

Simple Payback: Conventional				
	\$220,000.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$334,000.00	/	\$20,271.19	= 16.5 yrs
Incremental Payback: Conventional to Green				
	\$114,000.00	/	\$20,271.19	= 5.6 yrs

Simple Payback Analysis

EWCM 2-A Upgrade Old Building Boilers

2 boilers provide steam heat to the High School, one was recently replaced. Upgrade the older boilers with high efficiency models.

Replacement Costs		Type	Cost
A. Proposed Conventional:		Replacement of older boilers	\$570,000.00
B. Proposed Green:		High-efficiency boiler	\$980,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$410,000.00

Boiler Efficiencies		
A. Existing Efficiency:		75%
B. Conventional Efficiency:		75%
C. Green Efficiency:		96%

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	35,459,189.719 btus
		372428.41 therms	372428.41 therms	354591.90 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$326,579.14

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$326,579.14	= \$16,427.43 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$16,427.43	= \$16,427.43 /yr

Simple Payback: Conventional				
	\$570,000.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$980,000.00	/	\$16,427.43	= 59.7 yrs
Incremental Payback: Conventional to Green				
	\$410,000.00	/	\$16,427.43	= 25.0 yrs

Simple Payback Analysis

EWCM #3 Upgrade Heating Control System

Replace the existing Pneumatic control system (including air compressors) with Digital Energy Management System (EMS)

Replacement Costs		Type	Cost
A. Proposed Conventional:		Maintain Existing Pneumatic System	\$520,660.00
B. Proposed Green:		Digital EMS Control System	\$600,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$79,340.00

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	34,891,556.580 btus
		372428.41 therms	372428.41 therms	348915.57 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$321,351.24

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$321,351.24	= \$21,655.33 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$21,655.33	= \$21,655.33 /yr

Simple Payback: Conventional				
	\$520,660.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$600,000.00	/	\$21,655.33	= 27.7 yrs
Incremental Payback: Conventional to Green				
	\$79,340.00	/	\$21,655.33	= 3.7 yrs

Simple Payback Analysis

EWCM #4 Upgrade Circulation Pumps

Description: This worksheet calculates the annual savings and simple payback of replacing existing pump motors with comparable premium efficient motors.

Methodology: Energy usage for each motor is calculated by converting the motor's horsepower (hp) rating to kilowatts (kW), and multiplying the kW value by the annual hours of use, and dividing this amount by the motor's efficiency:

$$\{ (\text{hp}) \times (0.746 \text{ kW/hp}) \times (\text{hours}) \} \div (\text{Motor efficiency})$$

Replacement Costs

	Type	Cost
A. Proposed Conventional:	Standard Service Pumps	\$5,710.00
B. Proposed Green:	Premium Service Pumps	\$7,800.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$2,090.00

Utility Cost

Electricity: \$0.178

Existing Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Existing Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	4	5	.746	3.7300	5840	100%	83.0%	104,979	\$18,686
Heat P2	4	1	.746	0.7460	5840	100%	81.0%	21,514	\$3,830
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								126,494	\$22,516

Proposed Green Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Proposed Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	4	5	.746	3.7300	5840	100%	92.5%	94,198	\$16,767
Heat P2	4	1	.746	0.7460	5840	100%	90.0%	19,363	\$3,447
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								113,560	\$20,214

Annual Savings: Existing to Proposed Green

$$\text{Savings} = \$22,515.85 - \$20,213.76 = \$2,302.09 / \text{yr}$$

Simple Payback: Existing to Proposed Green

$$\$2,090.00 / \$2,302.09 = 0.9 \text{ yrs}$$

Simple Payback Analysis

EWCM #5 Upgrade Domestic Hot Water Boilers

Replace existing atmospheric domestic hot water boilers with high efficiency condensing models

Replacement Costs

	Type	Cost
A. Proposed Conventional:	Conventional atmospheric DHW boilers	\$20,000.00
B. Proposed Green:	High-efficiency DHW boiler	\$31,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$11,000.00

Boiler Efficiencies

A. Existing Efficiency:	80%
B. Conventional Efficiency:	80%
C. Green Efficiency:	96%

Annual Utility Cost

	Existing	Conventional	Green
	7,036,689.801 btus	7,036,689.801 btus	4,247,789.448 btus
	70366.90 therms	70366.90 therms	42477.89 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$64,807.91	\$64,807.91	\$39,122.14

Annual Savings: Existing to Conventional

Savings = \$64,807.91 - \$64,807.91 = \$0.00 /yr

Annual Savings: Conventional to Green

Savings = \$64,807.91 - \$39,122.14 = \$25,685.77 /yr

Annual Savings: Existing to Green

Savings = \$0.00 + \$25,685.77 = \$25,685.77 /yr

Simple Payback: Conventional

\$20,000.00 / \$0.00 = N/A yrs

Simple Payback: Green

\$31,000.00 / \$25,685.77 = 1.2 yrs

Incremental Payback: Conventional to Green

\$11,000.00 / \$25,685.77 = 0.4 yrs

Simple Payback Analysis

EWCM #6 Upgrade Steam Classroom Ventilators

Replace existing steam classroom ventilators with hydronic ventilators that include a heat recovery module.
Upgrade to water source heat pump ventilators providing heat and air conditioning.

Replacement Costs		Type	Cost
A. Proposed Conventional:		Hydronic Ventilators with Heat Recovery	\$1,250,000.00
B. Proposed Green:		Water Source Heat Pump Ventilators	\$2,250,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$1,000,000.00

HVAC SEER Values		
A. Existing SEER:		N/A
B. Proposed Conventional SEER:		N/A
C. Proposed Green SEER:		18.0

Annual Utility Cost, Heating		Existing	Conventional	Green
		Gas	Gas	Gas
		37,242,841.273 btus	32,563,721,848 btus	22,345,704,764 btus
		372428.41 therms	325637.22 therms	223457.05 therms
Utility Cost		\$0.92 /therm	\$0.92 /therm	\$0.92 /therm
Heating Cost		\$343,006.57	\$299,911.88	\$205,803.94

Annual Utility Cost, Cooling		Existing	Conventional	Green
		Electric	Electric	Electric
		0 btus	0 btus	584,987,400 btus
		0.00 kWhs	0.00 kWhs	171450.00 kWhs
Utility Cost		\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost		\$0.00	\$0.00	\$30,518.10

Annual Savings: Existing to Conventional	
Savings =	\$343,006.57 - \$299,911.88 = \$43,094.69/yr

Annual Savings: Conventional to Green	
Savings =	\$299,911.88 - \$236,322.04 = \$63,589.84/yr

Annual Savings: Existing to Green	
Savings =	\$43,094.69 + \$63,589.84 = \$106,684.53/yr

Simple Payback: Conventional	
\$1,250,000.00	/ \$43,094.69 = 29.0 yrs
Simple Payback: Green	
\$2,250,000.00	/ \$106,684.53 = 21.1 yrs
Incremental Payback: Conventional to Green	
\$1,000,000.00	/ \$63,589.84 = 15.7 yrs

Simple Payback Analysis

EWCM #7 Upgrade Split System Air Conditione

Replace existing split system SEER 13 Air Conditioners with models rated at SEER 18 for higher efficiency and lower utility costs.

Replacement Costs

	Type	Cost
A. Proposed Conventional:	SEER 13 Rated Models	\$10,500.00
B. Proposed Green:	SEER 18 Rated Models	\$13,500.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$3,000.00

HVAC SEER Values

A. Existing SEER:	10.0
B. Proposed Conventional SEER:	13.0
C. Proposed Green SEER:	18.0

Annual Utility Cost, Heating

	Existing	Conventional	Green
	Electric	Electric	Electric
	26,859,264 btus	20,666,484 btus	14,924,088 btus
	7872.00 kWhs	6057.00 kWhs	4374.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Heating Cost	\$1,401.22	\$1,078.15	\$778.57

Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Gas	Gas	Gas
	0.00 btus	0.00 btus	0.00 btus
	0.00 therms	0.00 therms	0.00 therms
Utility Cost	\$0.18 /therm	\$0.18 /therm	\$0.18 /therm
Cooling Cost	\$0.00	\$0.00	\$0.00

Annual Savings: Existing to Conventional

Savings = \$1,401.22 - \$1,078.15 = \$323.07/yr

Annual Savings: Conventional to Green

Savings = \$1,078.15 - \$778.57 = \$299.57/yr

Annual Savings: Existing to Green

Savings = \$323.07 + \$299.57 = \$622.64/yr

Simple Payback: Conventional

\$10,500.00 / \$323.07 = 32.5 yrs

Simple Payback: Green

\$13,500.00 / \$622.64 = 21.7 yrs

Incremental Payback: Conventional to Green

\$3,000.00 / \$299.57 = 10.0 yrs

Simple Payback Analysis

EWCM #8 Gym and Locker Room
Heat/Ventilation System Upgrade

Replace existing ventilators with models that include heat recovery modules

Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-kind Hydronic Replacements	\$90,000.00
B. Proposed Green:	Hydronic Replacements with Heat Recovery	\$180,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$90,000.00

HVAC SEER Values

A. Existing SEER:	N/A
B. Proposed Conventional SEER:	N/A
C. Proposed Green SEER:	N/A

Annual Utility Cost, Heating

	Existing	Conventional	Green
	Gas	Gas	Gas
	37,242,841,273 btus	37,242,841,273 btus	36,483,134,798 btus
	372428.41 therms	372428.41 therms	364831.35 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$343,006.57	\$343,006.57	\$336,009.67

Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Electric	Electric	Electric
	0 btus	0 btus	0 btus
	0.00 kWhs	0.00 kWhs	0.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost	\$0.00	\$0.00	\$0.00

Annual Savings: Existing to Conventional

Savings = \$343,006.57 - \$343,006.57 = \$0.00/yr

Annual Savings: Conventional to Green

Savings = \$343,006.57 - \$336,009.67 = \$6,996.90/yr

Annual Savings: Existing to Green

Savings = \$0.00 + \$6,996.90 = \$6,996.90/yr

Simple Payback: Conventional

\$90,000.00 / \$0.00 = N/A yrs

Simple Payback: Green

\$180,000.00 / \$6,996.90 = 25.7 yrs

Incremental Payback: Conventional to Green

\$90,000.00 / \$6,996.90 = 12.9 yrs

Simple Payback Analysis

EWCM #9 Upgrade Roof Top Ventilators

Upgrade the J. C. Roof top hydronic makeup air units with models that utilize Heat Recovery modules.

Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-kind Hydronic Replacements	\$150,000.00
B. Proposed Green:	Hydronic Replacements with Heat Recovery	\$200,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$50,000.00

HVAC SEER Values

A. Existing SEER:	N/A
B. Proposed Conventional SEER:	N/A
C. Proposed Green SEER:	N/A

Annual Utility Cost, Heating

	Existing	Conventional	Green
	Gas	Gas	Gas
	37,242,841,273 btus	37,242,841,273 btus	36,783,134,798 btus
	372428.41 therms	372428.41 therms	367831.35 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$343,006.57	\$343,006.57	\$338,772.67

Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Electric	Electric	Electric
	0 btus	0 btus	0 btus
	0.00 kWhs	0.00 kWhs	0.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost	\$0.00	\$0.00	\$0.00

Annual Savings: Existing to Conventional

Savings = \$343,006.57 - \$343,006.57 = \$0.00/yr

Annual Savings: Conventional to Green

Savings = \$343,006.57 - \$338,772.67 = \$4,233.90/yr

Annual Savings: Existing to Green

Savings = \$0.00 + \$4,233.90 = \$4,233.90/yr

Simple Payback: Conventional

\$150,000.00 / \$0.00 = N/A yrs

Simple Payback: Green

\$200,000.00 / \$4,233.90 = 47.2 yrs

Incremental Payback: Conventional to Green

\$50,000.00 / \$4,233.90 = 11.8 yrs

Simple Payback Analysis

EWCM #10 Upgrade Roof Exhaust Fan Motors

Description: This worksheet calculates the annual savings and simple payback of replacing existing fan motors with comparable premium efficient motors.

Methodology: Energy usage for each motor is calculated by converting the motor's horsepower (hp) rating to kilowatts (kW), and multiplying the kW value by the annual hours of use, and dividing this amount by the motor's efficiency:

$$\{ (\text{hp}) \times (0.746 \text{ kW/hp}) \times (\text{hours}) \} \div (\text{Motor efficiency})$$

Replacement Costs

	Type	Cost
A. Proposed Conventional:	Standard Service Motors	\$39,000.00
B. Proposed Green:	Premium Service Motors	\$58,500.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$19,500.00

Utility Cost

Electricity: \$0.178

Existing Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Existing Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	26	3	.746	2.2380	4380	100%	86.0%	296,353	\$52,751
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								296,353	\$52,751

Proposed Green Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Proposed Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	26	3	.746	2.2380	4380	100%	91.0%	280,070	\$49,852
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								280,070	\$49,852

Annual Savings: Existing to Proposed Green

Savings = \$52,750.81 - \$49,852.41 = \$2,898.40 / yr

Simple Payback: Existing to Proposed Green

\$19,500.00 / \$2,898.40 = 6.7 yrs

Simple Payback Analysis

EWCM #11 Upgrade Exterior Doors (Entry/Service)

Replacement Costs		Type	Cost
A. Proposed Conventional		Various Materials Wood, Aluminum, Metal	\$201,200.00
B. Proposed Green		Fiberglass, Insulated	\$277,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green			\$75,800.00

Existing Conditions	
General: Existing doors vary in materials, insulation, and glass lights. Generally the doors are not insulated. A small amount have insulated double-pane glass.	
A. Door Type:	Varies
B. Total Area of Doors:	1,974 sf
C. Utility Cost:	Gas \$0.92 /therm

U-Factor	
A. Existing:	≈.82
B. Conventional:	0.82
C. Green:	0.38

Annual Savings: Existing to Conventional	
	0 BTUs
	0.00 therms
Savings =	\$0.92 x 0.00 = \$0.00 /yr

Annual Savings: Conventional to Green	
	5,226,000 BTUs
	52.26 therms
Savings =	\$0.92 x 52.26 = \$48.13 /yr

Annual Savings: Existing to Green	
	5,226,000 BTUs
	52.26 therms
Savings =	\$0.00 + \$48.13 = \$48.13 /yr

Simple Payback: Conventional	
\$201,200.00	/ \$0.00 = #DIV/0! yrs
Simple Payback: Green	
\$277,000.00	/ \$48.13 = 5755.1 yrs
Incremental Payback: Conventional to Green	
\$75,800.00	/ \$48.13 = 1574.9 yrs

Additional Notes:

Simple Payback Analysis

EWCM #12 Upgrade Windows

Replacement Costs	Type	Cost
A. Proposed Conventional:	Steel and Wood Framed DH/Casement types Single Glazed	\$2,550,600.00
B. Proposed Green:	Insulated Fiberglass Framed, Dbl Glazed, low E, Argon	\$2,808,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$257,400.00

Existing Conditions	
General: Metal framed and single glazed windows have little or no insulation value.	
A. Window Type:	Metal/Wood
B. Total Area of Windows:	46,332 sf
C. Utility Cost:	Gas \$0.921 /therm

U-Factor ¹	
A. Existing:	1.27
B. Conventional:	1.27
C. Green:	0.38

Annual Savings: Existing to Conventional	
	0 BTUs
	0.00 therms
Savings =	\$0.921 x 0.00 = \$0.00 /yr

Annual Savings: Conventional to Green	
	810,000,000 BTUs
	8100.00 therms
Savings =	\$0.921 x 8100.00 = \$7,460.10 /yr

Annual Savings: Existing to Green	
	810,000,000 BTUs
	8100.00 therms
Savings =	\$0.00 + \$7,460.10 = \$7,460.10 /yr

Simple Payback: Conventional				
\$2,550,600.00	/	\$0.00	=	N/A yrs
Simple Payback: Green				
\$2,808,000.00	/	\$7,460.10	=	376.4 yrs
Incremental Payback: Conventional to Green				
\$257,400.00	/	\$7,460.10	=	34.5 yrs

Additional Notes:
1 The U-factors were derived from the 2001 ASHRAE Fundamentals Handbook, based on the specifications in the plan

Simple Payback Analysis

EWCM #13 Upgrade Building Interior Lighting

Replacement Costs

A. Total cost to upgrade Fluorescent Fixtures with LED Fixtures: \$1,000,000.00

Utility Cost

Electricity: \$0.18
Natural Gas: \$0.92

Existing Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	Fluorescent Tube Fixture	32	9,127	8	365	852,827	\$151,803.18
Type 2:						0	\$0.00
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						852,827	\$151,803.18

Proposed Green Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	LED Replacement Fixture	15	9,127	8	365	399,763	\$71,157.74
Type 2:						0	\$0.00
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						399,763	\$71,157.74

Annual Electric Savings

1,545,855.323 BTUs
453,064.28 kWh
Savings = 453,064.28 x \$0.18 = \$80,645.44/yr

Annual Natural Gas Savings¹

-108,000.00 BTUs
-1,080.00 therms
Savings = -1,080.00 x \$0.92 = -\$994.68/yr

Annual Net Cost Savings

\$80,645.44 + -\$994.68 = \$79,650.76

5. Simple Payback

\$1,000,000.00 / \$79,650.76 = 12.55 yrs

Additional Notes/Comments:

¹Negative natural gas savings attributed to decrease in heating gain from the reduced lighting load (wattage); therefore, additional natural gas required for space heating in these areas.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 1

Upgrade Exterior Lighting

High Intensity Discharge (HID) Fixtures

vs.

Long life, Efficient LED Fixtures

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

20

Conventional Product:

High Intensity Discharge (HID) Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	HID Fixtures	25	ea	\$1,800.00	\$45,000	20	1	1.0	\$45,000	\$45,000
Maintain	Bulb/Ballast Repl.	25	ea	\$150.00	\$3,750	4	1	5.0	\$24,085	\$13,299
Utility Cost	Electricity	54,750	kWh	\$0.178	\$9,746	1	1	20.0	\$261,865	\$128,933

Total Life Cycle Cost

\$330,951

\$187,232

Energy Savings

Net Life Cycle Cost after Energy Savings									\$330,951	\$187,232

Green Product:

Long life, Efficient LED Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	LED Fixtures	25	ea	\$2,050.00	\$51,250	20	1	1.0	\$51,250	\$51,250
Maintain	N/A									
Utility Cost	Electricity	7,665	kWh	\$0.178	\$1,364	1	1	20.0	\$36,661	\$18,051

Total Life Cycle Cost

\$87,911

\$69,301

Energy Savings

Net Life Cycle Cost after Energy Savings									\$87,911	\$69,301

ECONOMIC RETURN ANALYSIS

Green NPV	\$117,931
Green IRR	n/a

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Long life, Efficient LED Fixtures

Override with Green Product? No

Final Product Choice

Green Product: Long life, Efficient LED Fixtures

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 1

Upgrade Exterior Lighting

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Final Product Choice

Green Product:

Long life, Efficient LED Fixtures

Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Fixtures	25	ea	\$2,050.00	\$51,250	20	1	1.0	\$51,250	\$51,250
Maintain	N/A									
Utility Cost	Electricity	7,665	kWh	\$0.18	\$1,364	1	1	20.0	\$36,661	\$18,051
									\$0	\$0
Total Life Cycle Cost									\$87,911	\$69,301
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$87,911	\$69,301

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCN): # 2 Upgrade Heating Boilers Freshman Bldg

Gas-fired Steam Boilers

vs.

Replace older boiler & Convert Newer Boiler to Hydronic

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Gas-fired Steam Boilers

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Older Steam Boiler	1	ea	\$190,000.00	\$190,000	40	1	1.0	\$190,000	\$190,000
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000
Utility Cost	Natural Gas	372,428	Therms	\$0.921	\$343,007	1	1	40.0	\$25,863,127	\$6,296,455
Maintain	Distribution System	1	ls	\$375,000.00	\$375,000	20	1	2.0	\$1,052,292	\$520,312
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$27,135,419	\$7,036,767

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$27,135,419	\$7,036,767

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	1	1.0	\$304,000	\$304,000
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000
Utility Cost	Natural Gas	350,418	Therms	\$0.921	\$322,735	1	1	40.0	\$24,334,624	\$5,924,336
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$25,168,624	\$6,758,336

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$25,168,624	\$6,758,336

ECONOMIC RETURN ANALYSIS

Green NPV	\$278,430
Green IRR	14.7%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Override with Green Product? No

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Energy and Water Conservation Measure (EWCM): # 2

Upgrade Heating Boilers Freshman Bldg

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Immediate Replacement

				Year	1						Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	1	1.0	\$304,000	\$304,000		
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000		
Utility Cost	Natural Gas	350,418	Therms	\$0.92	\$322,735	1	1	40.0	\$24,334,624	\$5,924,336		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Total Life Cycle Cost										\$25,168,624	\$6,758,336	

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$25,168,624	\$6,758,336	

Replacement at End of Remaining Useful Life

				Year	0							
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	0	1.0	\$24,069	\$1,197		
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	0	1.0	\$2,375	\$118		
Utility Cost	Natural Gas	350,418	Therms	\$0.92	\$322,735	1	0	41.0	\$24,334,624	\$5,924,336		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	0	1.0	\$39,588	\$1,968		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0		
					\$0			0.0	\$0	\$0		
Total Life Cycle Cost										\$24,400,656	\$5,927,619	

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$24,400,656	\$5,927,619	

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year: 1

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCN): 2-A Upgrade Heating Boilers

Gas-fired Steam Boilers

vs.

Replace older boiler & Convert Newer Boiler to Hydronic

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Gas-fired Steam Boilers

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Older Steam Boiler	2	ea	\$190,000.00	\$380,000	40	1	1.0	\$380,000	\$380,000
					\$0			0.0	\$0	\$0
Utility Cost	Natural Gas	372,428	Therms	\$0.921	\$343,007	1	1	40.0	\$25,863,127	\$6,296,455
Maintain	Distribution System	1	ls	\$375,000.00	\$375,000	20	1	2.0	\$1,052,292	\$520,312
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$27,295,419	\$7,196,767

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$27,295,419	\$7,196,767

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	1	1.0	\$608,000	\$608,000
					\$0			0.0	\$0	\$0
Utility Cost	Natural Gas	354,592	Therms	\$0.921	\$326,579	1	1	40.0	\$24,624,479	\$5,994,902
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	1	1.6	\$124,234	\$84,507
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$25,856,712	\$7,187,409

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$25,856,712	\$7,187,409

ECONOMIC RETURN ANALYSIS

Green NPV	\$9,357
Green IRR	8.2%

Notes:

- Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
- Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Override with Green Product? No

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Energy and Water Conservation Measure (EWCM): 2-A

Upgrade Heating Boilers

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Immediate Replacement

				Year	1						Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	1	1.0	\$608,000	\$608,000		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Utility Cost	Natural Gas	354,592	Therms	\$0.92	\$326,579	1	1	40.0	\$24,624,479	\$5,994,902		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000		
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	1	1.6	\$124,234	\$84,507		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Total Life Cycle Cost										\$25,856,712	\$7,187,409	

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$25,856,712	\$7,187,409	

Replacement at End of Remaining Useful Life

				Year	0							
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	0	1.0	\$48,139	\$2,393		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Utility Cost	Natural Gas	354,592	Therms	\$0.92	\$326,579	1	0	41.0	\$24,624,479	\$5,994,902		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	0	1.0	\$39,588	\$1,968		
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	0	1.6	\$60,701	\$17,945		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0		
					\$0			0.0	\$0	\$0		
Total Life Cycle Cost										\$24,772,906	\$6,017,208	

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$24,772,906	\$6,017,208	

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year: 1

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 3 Upgrade Heating Controls

Maintain Existing Pneumatic Heating Control System

vs.

Install Digital Energy Management System (EMS)

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Maintain Existing Pneumatic Heating Control System

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Maintain	Periodic Maintenance	7	cycles	\$71,500.00	\$500,500	20	1	1.0	\$500,500	\$500,500
Install/Replace	Air Compressors	1	ls	\$20,160.00	\$20,160	20	1	1.0	\$20,160	\$20,160
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$520,660	\$520,660

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$520,660	\$520,660

Green Product:

Install Digital Energy Management System (EMS)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	1	1.3	\$902,826	\$793,172
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$902,826	\$793,172

Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.921	(\$21,655)	1	1	20.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									\$320,960	\$506,681

ECONOMIC RETURN ANALYSIS

Green NPV	\$13,979
Green IRR	10.3%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Digital Energy Management System (EMS)

Override with Green Product? No

Final Product Choice

Green Product: Install Digital Energy Management System (EMS)

Energy and Water Conservation Measure (EWCM): # 3

Upgrade Heating Controls

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Install Digital Energy Management System (EMS)

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	1	1.3	\$902,826	\$793,172
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$902,826	\$793,172

Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.92	(\$21,655)	1	1	20.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									\$320,960	\$506,681

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	0	1.4	\$299,316	\$176,275
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$299,316	\$176,275

Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.92	(\$21,655)	1	0	21.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									(\$282,550)	(\$110,215)

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 4 Upgrade Existing Heating Circulation Pumps

Standard Service Pumps

vs.

Premium Service Pumps

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Standard Service Pumps

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Life Cycle Costs										
Install/Replace	Standard Duty 5-HP	4	ea	\$3,360.00	\$13,440	20	1	1.0	\$13,440	\$13,440
Install/Replace	Standard Duty 1-HP	4	ea	\$2,350.00	\$9,400	20	1	1.0	\$9,400	\$9,400
Utility Cost	Electricity	126,494	kWh	\$0.178	\$22,516	1	1	20.0	\$605,012	\$297,887
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$627,852	\$320,727

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$627,852	\$320,727

Green Product: Premium Service Pumps

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Life Cycle Costs										
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	1	1.0	\$18,000	\$18,000
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	1	1.0	\$13,200	\$13,200
Utility Cost	Electricity	113,560	kWh	\$0.178	\$20,214	1	1	20.0	\$543,149	\$267,428
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$574,349	\$298,628

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$574,349	\$298,628

ECONOMIC RETURN ANALYSIS

Green NPV	\$22,099
Green IRR	42.1%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Premium Service Pumps

Override with Green Product? No

Final Product Choice

Green Product: Premium Service Pumps

Energy and Water Conservation Measure (EWCM): # 4

Upgrade Existing Heating Circulation Pumps

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

0
0

Final Product Choice

Green Product:

Premium Service Pumps

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	1	1.0	\$18,000	\$18,000
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	1	1.0	\$13,200	\$13,200
Utility Cost	Electricity	113,560	kWh	\$0.18	\$20,214	1	1	20.0	\$543,149	\$267,428
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$574,349	\$298,628

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$574,349	\$298,628

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	0	1.1	\$1,578	\$366
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	0	1.1	\$1,157	\$268
Utility Cost	Electricity	113,560	kWh	\$0.18	\$20,214	1	0	21.0	\$543,149	\$267,428
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$545,885	\$268,062

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$545,885	\$268,062

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

- Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
- Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 5

Upgrade Domestic Hot Water Boilers

Conventional Atmospheric DHW Boilers

vs.

High-Efficiency Condensing DHW Boilers

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Conventional Atmospheric DHW Boilers

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Atmospheric Boilers	1	ea	\$10,000.00	\$10,000	20	1	1.0	\$10,000	\$10,000
Install/Replace	Atmospheric Boilers	1	ea	\$10,000.00	\$10,000	20	1	1.0	\$10,000	\$10,000
Utility Cost	Natural Gas	70,367	Therms	\$0.921	\$64,808	1	1	20.0	\$1,741,413	\$857,412
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,761,413	\$877,412

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,761,413	\$877,412

Green Product:

High-Efficiency Condensing DHW Boilers

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Utility Cost	Natural Gas	42,478	Therms	\$0.921	\$39,122	1	1	20.0	\$1,051,226	\$517,588
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,082,226	\$548,588

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,082,226	\$548,588

ECONOMIC RETURN ANALYSIS

Green NPV	\$328,824
Green IRR	n/a

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: High-Efficiency Condensing DHW Boilers

Override with Green Product? No

Final Product Choice

Green Product: High-Efficiency Condensing DHW Boilers

Energy and Water Conservation Measure (EWCM): # 5

Upgrade Domestic Hot Water Boilers

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

11
12

Final Product Choice

Green Product: High-Efficiency Condensing DHW Boilers

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Utility Cost	Natural Gas	42,478	Therms	\$0.92	\$39,122	1	1	20.0	\$1,051,226	\$517,588
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$1,082,226	\$548,588

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,082,226	\$548,588

Replacement at End of Remaining Useful Life

Year

12

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	12	0.5	\$6,507	\$5,738
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	12	0.5	\$6,507	\$5,738
Utility Cost	Natural Gas	42,478	Therms	\$0.92	\$39,122	1	12	9.0	\$550,158	\$174,227
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$563,172	\$185,703

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$563,172	\$185,703

ECONOMIC RETURN ANALYSIS

Timing NPV	(\$362,884)
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	12
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 6 Upgrade Class Room Ventilators

Install Hydronic Ventilators with Heat Recovery

vs.

Install Water Source Heat Pumps With Heat Recovery

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	1	1.0	\$1,250,000	\$1,250,000
Utility Cost	Natural Gas	325,637	Therms	\$0.921	\$299,912	1	1	20.0	\$8,058,745	\$3,967,848
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$9,308,745	\$5,217,848

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$9,308,745	\$5,217,848

Green Product: Install Water Source Heat Pumps With Heat Recovery

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Heat Pump Ventilators with Heat Recovery	1	Is	\$2,250,000.00	\$2,250,000	20	1	1.0	\$2,250,000	\$2,250,000
Utility Cost	Natural Gas	223,457	Therms	\$0.921	\$205,804	1	1	20.0	\$5,530,029	\$2,722,795
Utility Cost	Electricity	171,450	kWh	\$0.178	\$30,518	1	1	20.0	\$820,033	\$403,756
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$8,600,062	\$5,376,551

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$8,600,062	\$5,376,551

ECONOMIC RETURN ANALYSIS

Green NPV (\$158,704)
Green IRR 5.8%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Override with Green Product? No

Final Product Choice

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 6

Upgrade Class Room Ventilators

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Conventional Product:

Install Hydronic Ventilators with Heat Recovery

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	1	1.0	\$1,250,000	\$1,250,000
Utility Cost	Natural Gas	325,637	Therms	\$0.92	\$299,912	1	1	20.0	\$8,058,745	\$3,967,848
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$9,308,745	\$5,217,848

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$9,308,745	\$5,217,848

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	0	1.1	\$109,594	\$25,394
Utility Cost	Natural Gas	325,637	Therms	\$0.92	\$299,912	1	0	21.0	\$8,058,745	\$3,967,848
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$8,168,339	\$3,993,242

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$8,168,339	\$3,993,242

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:

1

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 7 Upgrade Split System Air Conditioners

Install SEER 13 Rated Models

vs.

Install SEER 18 Rated Models

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Install SEER 13 Rated Models

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	SEER 13 Models	3	ea	\$3,500.00	\$10,500	20	1	1.0	\$10,500	\$10,500
Utility Cost	Electricity	6,057	kWh	\$0.178	\$1,078	1	1	20.0	\$28,970	\$14,264
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$39,470	\$24,764

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$39,470	\$24,764

Green Product: Install SEER 18 Rated Models

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	1	1.0	\$13,500	\$13,500
Utility Cost	Electricity	4,374	kWh	\$0.178	\$779	1	1	20.0	\$20,921	\$10,301
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$34,421	\$23,801

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$34,421	\$23,801

ECONOMIC RETURN ANALYSIS

Green NPV	\$963
Green IRR	12.2%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install SEER 18 Rated Models

Override with Green Product? No

Final Product Choice

Green Product: Install SEER 18 Rated Models

Energy and Water Conservation Measure (EWCM): # 7

Upgrade Split System Air Conditioners

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

0

Final Product Choice

Green Product:

Install SEER 18 Rated Models

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	1	1.0	\$13,500	\$13,500
Utility Cost	Electricity	4,374	kWh	\$0.18	\$779	1	1	20.0	\$20,921	\$10,301
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$34,421	\$23,801

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$34,421	\$23,801

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	0	1.1	\$1,184	\$274
Utility Cost	Electricity	4,374	kWh	\$0.18	\$779	1	0	21.0	\$20,921	\$10,301
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$22,104	\$10,575

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$22,104	\$10,575

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 8

Upgrade Gym and Locker Room Ventilators

Install Hydronic Ventilators

vs.

Install Hydronic Ventilators with Heat Recovery Modules

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 50

Conventional Product: Install Hydronic Ventilators

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Hydronic Ventilators	6	ea	\$15,000.00	\$90,000	50	1	1.0	\$90,000	\$90,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$90,000	\$90,000

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$90,000	\$90,000

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Hydronic Ventilators w/Heat Recovery	6	ea	\$30,000.00	\$180,000	50	1	1.0	\$180,000	\$180,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$180,000	\$180,000

Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.921	(\$6,997)	1	1	50.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$609,228)	\$42,994

ECONOMIC RETURN ANALYSIS

Green NPV	\$47,006
Green IRR	11.5%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Override with Green Product? No

Final Product Choice

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 8

Upgrade Gym and Locker Room Ventilators

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

0

Final Product Choice

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hydronic Ventilators w/Heat Recovery Modules	6	ea	\$30,000.00	\$180,000	50	1	1.0	\$180,000	\$180,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$180,000	\$180,000

Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.92	(\$6,997)	1	1	50.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$609,228)	\$42,994

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hydronic Ventilators w/Heat Recovery Modules	6	ea	\$30,000.00	\$180,000	50	0	1.0	\$15,322	\$353
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$15,322	\$353

Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.92	(\$6,997)	1	0	51.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$773,905)	(\$136,654)

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year: 1

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 9

Upgrade Rooftop Makeup Air Units

Replace In-kind

vs.

Install Ventilators with Heat Recovery Modules

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Replace In-kind

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	In-kind Replacement	5	ea	\$30,000.00	\$150,000	20	1	1.0	\$150,000	\$150,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$150,000	\$150,000

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$150,000	\$150,000

Green Product:

Install Ventilators with Heat Recovery Modules

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	1	1.0	\$200,000	\$200,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$200,000	\$200,000

Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.921	(\$4,234)	1	1	20.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									\$86,235	\$143,986

ECONOMIC RETURN ANALYSIS

Green NPV	\$6,014
Green IRR	9.6%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Ventilators with Heat Recovery Modules

Override with Green Product? No

Final Product Choice

Green Product: Install Ventilators with Heat Recovery Modules

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 9

Upgrade Rooftop Makeup Air Units

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Install Ventilators with Heat Recovery Modules

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	1	1.0	\$200,000	\$200,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$200,000	\$200,000

Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.92	(\$4,234)	1	1	20.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									\$86,235	\$143,986

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	0	1.1	\$17,535	\$4,063
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$17,535	\$4,063

Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.92	(\$4,234)	1	0	21.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									(\$96,230)	(\$51,951)

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 10 Upgrade Roof Exhaust Fan Motors

Standard Service Motors

vs.

Premium Service Motors

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Standard Service Motors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Standard Service	26	ea	\$1,500.00	\$39,000	20	1	1.0	\$39,000	\$39,000
Utility Cost	Electricity	296,353	kWh	\$0.178	\$52,751	1	1	20.0	\$1,417,435	\$697,896
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,456,435	\$736,896

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,456,435	\$736,896

Green Product: Premium Service Motors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	1	1.0	\$58,500	\$58,500
Utility Cost	Electricity	280,070	kWh	\$0.178	\$49,852	1	1	20.0	\$1,339,554	\$659,550
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,398,054	\$718,050

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,398,054	\$718,050

ECONOMIC RETURN ANALYSIS

Green NPV	\$18,846
Green IRR	20.0%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Premium Service Motors

Override with Green Product? No

Final Product Choice

Green Product: Premium Service Motors

Energy and Water Conservation Measure (EWCM): # 10 Upgrade Roof Exhaust Fan Motors

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

0

Final Product Choice

Green Product: Premium Service Motors

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	1	1.0	\$58,500	\$58,500
Utility Cost	Electricity	280,070	kWh	\$0.18	\$49,852	1	1	20.0	\$1,339,554	\$659,550
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$1,398,054	\$718,050

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,398,054	\$718,050

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	0	1.1	\$5,129	\$1,188
Utility Cost	Electricity	280,070	kWh	\$0.18	\$49,852	1	0	21.0	\$1,339,554	\$659,550
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,344,683	\$660,739

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,344,683	\$660,739

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 11 Upgrade Exterior Doors

Various Material (Wood, Aluminum, Steel) Doors

vs.

Install Insulated Fiberglass Doors

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 45

Conventional Product:

Various Material (Wood, Aluminum, Steel) Doors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	1	1.3	\$202,537	\$187,270
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	1	1.3	\$37,172	\$34,369
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$239,709	\$221,639

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$239,709	\$221,639

Green Product:

Install Insulated Fiberglass Doors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Insul Fiberglass	68	ea	\$3,500.00	\$238,000	45	1	1.0	\$238,000	\$238,000
Install/Replace	Insul Fiberglass	26	ea	\$1,500.00	\$39,000	45	1	1.0	\$39,000	\$39,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$277,000	\$277,000

Energy Savings

Utility Cost	Natural Gas	52	Therms	\$0.921	(\$48)	1	1	45.0	(\$4,463)	(\$916)
Net Life Cycle Cost after Energy Savings									\$272,537	\$276,084

ECONOMIC RETURN ANALYSIS

Green NPV	(\$54,445)
Green IRR	n/a

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Various Material (Wood, Aluminum, Steel) Doors

Override with Green Product? No

Final Product Choice

Conventional Product: Various Material (Wood, Aluminum, Steel) Doors

Energy and Water Conservation Measure (EWCM): # 11

Upgrade Exterior Doors

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product
Replacement Year

0

Final Product Choice

Conventional Product:

Various Material (Wood, Aluminum, Steel) Doors

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	1	1.3	\$202,537	\$187,270
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	1	1.3	\$37,172	\$34,369
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$239,709	\$221,639

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$239,709	\$221,639

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	0	1.3	\$36,437	\$19,443
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	0	1.3	\$6,687	\$3,568
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$43,125	\$23,012

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$43,125	\$23,012

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year: 1

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 12 Upgrade Windows

Metal & Wood Framed, Single Glazed

vs.

Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Metal & Wood Framed, Single Glazed

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Existing Windows	936	ea	\$2,725.00	\$2,550,600	35	1	1.1	\$2,803,793	\$2,691,808
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,803,793	\$2,691,808

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,803,793	\$2,691,808

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Insulated Fiberglass, Dbl Glazed, low-E, Argon	936	ea	\$3,000.00	\$2,808,000	40	1	1.0	\$2,808,000	\$2,808,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,808,000	\$2,808,000

Energy Savings

Utility Cost	Natural Gas	8,100	Therms	\$0.921	(\$7,460)	1	1	40.0	(\$562,501)	(\$136,943)
Net Life Cycle Cost after Energy Savings									\$2,245,499	\$2,671,057

ECONOMIC RETURN ANALYSIS

Green NPV	\$20,750
Green IRR	8.4%

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Override with Green Product? No

Final Product Choice

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 12 Upgrade Windows

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product	0
Replacement Year	0

Final Product Choice	
Green Product:	Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Immediate Replacement				Year	1						Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	d Fiberglass, Dbl Glazed, low-	936	ea	\$3,000.00	\$2,808,000	40	1	1.0	\$2,808,000	\$2,808,000		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Total Life Cycle Cost										\$2,808,000	\$2,808,000	
<i>Energy Savings</i>												
Utility Cost	Natural Gas	8,100	Therms	\$0.92	(\$7,460)	1	1	40.0	(\$562,501)	(\$136,943)		
Net Life Cycle Cost after Energy Savings										\$2,245,499	\$2,671,057	

Replacement at End of Remaining Useful Life				Year	0							
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	d Fiberglass, Dbl Glazed, low-	936	ea	\$3,000.00	\$2,808,000	40	0	1.0	\$222,325	\$11,053		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		

<i>Expenses for Current Product Through Useful Life</i>												
					\$0			0.0	\$0	\$0		
					\$0			0.0	\$0	\$0		
Total Life Cycle Cost										\$222,325	\$11,053	
<i>Energy Savings</i>												
Utility Cost	Natural Gas	8,100	Therms	\$0.92	(\$7,460)	1	0	41.0	(\$562,501)	(\$136,943)		
Net Life Cycle Cost after Energy Savings										(\$340,176)	(\$125,890)	

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
-------------------	---

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 13 Upgrade Building Interior Lighting

Existing Fluorescent Tube Fixtures

vs.

LED Tube Fixtures

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Existing Fluorescent Tube Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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Life Cycle Costs

Install/Replace	Flourescent Tube	9,127	ea	\$82.17	\$750,000	20	1	1.0	\$750,000	\$750,000
Maintain	Bulb/Balast Repl.	9,127	ea	\$3.00	\$27,381	3	1	6.7	\$238,029	\$126,515
Utility Cost	Electricity	852,827	kWh	\$0.178	\$151,803	1	1	20.0	\$4,079,009	\$2,008,363
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$5,067,038	\$2,884,878

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$5,067,038	\$2,884,878

Green Product:

LED Tube Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	1	1.0	\$1,000,000	\$1,000,000
Utility Cost	Electricity	399,763	kWh	\$0.178	\$71,158	1	1	20.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.921	\$995	1		21.0	\$26,727	\$13,160
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,938,764	\$1,954,581

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,938,764	\$1,954,581

ECONOMIC RETURN ANALYSIS

Green NPV	\$930,297
Green IRR	64.2%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: LED Tube Fixtures

Override with Green Product? No

Final Product Choice

Green Product: LED Tube Fixtures

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

LED Tube Fixtures

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	1	1.0	\$1,000,000	\$1,000,000
Utility Cost	Electricity	399,763	kWh	\$0.18	\$71,158	1	1	20.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.92	\$995	1	0	21.0	\$26,727	\$13,160
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$2,938,764	\$1,954,581

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,938,764	\$1,954,581

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	0	1.1	\$87,675	\$20,315
Utility Cost	Electricity	399,763	kWh	\$0.18	\$71,158	1	0	21.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.92	\$995	1	(1)	22.0	\$26,727	\$13,160
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,026,440	\$974,896

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,026,440	\$974,896

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

1

Domestic Hot Water Storage

Glass Lined Tanks

vs.

Install Long-Life Stainless Steel Tanks

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Glass Lined Tanks

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Glass-Lined	2	ea	\$2,000.00	\$4,000	10	1	2.5	\$12,535	\$7,399
Install/Replace	Large Tank	1	ea	\$12,466.00	\$12,466	20	1	1.3	\$15,975	\$14,299
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$28,510	\$21,698

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$28,510	\$21,698

Green Product:

Install Long-Life Stainless Steel Tanks

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	1	1.0	\$5,000	\$5,000
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	1	1.0	\$15,000	\$15,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$20,000	\$20,000

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$20,000	\$20,000

ECONOMIC RETURN ANALYSIS

Green NPV	\$1,698
Green IRR	11.4%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Long-Life Stainless Steel Tanks

Override with Green Product? No

Final Product Choice

Green Product: Install Long-Life Stainless Steel Tanks

Green Measure (GM):

1

Domestic Hot Water Storage

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Replacement Year

0

Final Product Choice

Green Product:

Install Long-Life Stainless Steel Tanks

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	1	1.0	\$5,000	\$5,000
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	1	1.0	\$15,000	\$15,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$20,000	\$20,000

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$20,000	\$20,000

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	0	1.0	\$407	\$64
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	0	1.0	\$1,220	\$192
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,626	\$256

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,626	\$256

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
-------------------	---

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

2

Upgrade Resilient Flooring

Vinyl Composited Tile (VCT)

vs.

Natural Linoleum

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Vinyl Composited Tile (VCT)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Hallway	29,557	sf	\$5.00	\$147,785	15	1	1.7	\$277,890	\$204,576
Install/Replace	Class Rm	42,302	sf	\$5.00	\$211,510	15	1	1.7	\$397,717	\$292,789
Install/Replace	Cafeteria	8,200	sf	\$5.00	\$41,000	15	1	1.7	\$77,095	\$56,755
Install/Replace	Sch Office/Support	15,776	sf	\$5.00	\$78,880	15	1	1.7	\$148,324	\$109,192
Install/Replace	School Dept	359	sf	\$5.00	\$1,795	15	1	1.7	\$3,375	\$2,485
					\$0			0.0	\$0	\$0

Total Life Cycle Cost

\$904,401

\$665,797

Energy Savings

					\$0			0.0	\$0	\$0
--	--	--	--	--	-----	--	--	-----	-----	-----

Net Life Cycle Cost after Energy Savings

\$904,401

\$665,797

Green Product:

Natural Linoleum

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	1	1.0	\$192,121	\$192,121
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	1	1.0	\$274,963	\$274,963
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	1	1.0	\$53,300	\$53,300
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	1	1.0	\$102,544	\$102,544
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	1	1.0	\$2,334	\$2,334
					\$0			0.0	\$0	\$0

Total Life Cycle Cost

\$625,261

\$625,261

Energy Savings

					\$0			0.0	\$0	\$0
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Net Life Cycle Cost after Energy Savings

\$625,261

\$625,261

ECONOMIC RETURN ANALYSIS

Green NPV	\$40,536
Green IRR	10.1%

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product:	Natural Linoleum
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Override with Green Product?

No

Final Product Choice

Green Product:	Natural Linoleum
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Green Measure (GM):

2

Upgrade Resilient Flooring

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Natural Linoleum

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	1	1.0	\$192,121	\$192,121
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	1	1.0	\$274,963	\$274,963
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	1	1.0	\$53,300	\$53,300
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	1	1.0	\$102,544	\$102,544
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	1	1.0	\$2,334	\$2,334
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$625,261	\$625,261

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$625,261	\$625,261

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	0	1.0	\$15,622	\$2,464
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	0	1.0	\$22,358	\$3,526
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	0	1.0	\$4,334	\$683
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	0	1.0	\$8,338	\$1,315
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	0	1.0	\$190	\$30
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$50,841	\$8,018

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$50,841	\$8,018

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

Life Cycle Cost Analysis

Green Measure (GM):

3

Upgrade Carpet

Standard Olefin (Petroleum Based)

vs.

Carpet and Rug Institute (CRI) Green Label Plus

(Conventional Product)

(Green Product)

STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

10

Conventional Product:

Standard Olefin (Petroleum Based)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	1	1.0	\$25,956	\$25,956
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	1	1.0	\$9,364	\$9,364
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	1	1.0	\$63,104	\$63,104
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$98,424	\$98,424

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$98,424	\$98,424

Green Product:

Carpet and Rug Institute (CRI) Green Label Plus

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

Life Cycle Costs

Install/Replace	Media Center	6,489	sf	\$5.00	\$32,445	10	1	1.0	\$32,445	\$32,445
Install/Replace	Auditorium	2,341	sf	\$5.00	\$11,705	10	1	1.0	\$11,705	\$11,705
Install/Replace	School Department	15,776	sf	\$5.00	\$78,880	10	1	1.0	\$78,880	\$78,880
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$123,030	\$123,030

Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$123,030	\$123,030

ECONOMIC RETURN ANALYSIS

Green NPV	(\$24,606)
Green IRR	n/a

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product:	Standard Olefin (Petroleum Based)
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Override with Green Product? No

Final Product Choice

Conventional Product:	Standard Olefin (Petroleum Based)
-----------------------	-----------------------------------

Green Measure (GM):

3

Upgrade Carpet

STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

Replacement Year

0

Final Product Choice

Conventional Product:

Standard Olefin (Petroleum Based)

Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	1	1.0	\$25,956	\$25,956
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	1	1.0	\$9,364	\$9,364
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	1	1.0	\$63,104	\$63,104
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$98,424	\$98,424

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$98,424	\$98,424

Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	0	1.1	\$3,387	\$1,694
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	0	1.1	\$1,222	\$611
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	0	1.1	\$8,234	\$4,119
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$12,842	\$6,424

Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$12,842	\$6,424

ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

TIMING RECOMMENDATION

Replacement Year:	1
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Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.


Statement of Delivery

ON-SITE INSIGHT, Inc. (and/or its representatives) hereby certifies that, this Green Capital Needs Assessment (the “GCNA” or the “Report”) is delivered subject to the following terms and conditions:

1. This report and analysis are based upon observations for the visible and apparent condition of the building and its major components on the date of the fieldwork. Although care has been taken in the performance of this assessment, ON-SITE INSIGHT, Inc (and/or its representatives) makes no representations regarding latent or concealed defects that may exist and no warranty or guarantee is expressed or implied. This report is made only in the best exercise of our ability and judgment.
2. We have undertaken no formal evaluations of environmental concerns, including but not limited to asbestos containing materials (ACMs), lead based paint, chlorofluorocarbons (CFCs), polychlorinated biphenyls (PCBs), and mildew/mold.
3. Conclusions in this report are based on estimates of the age and normal working life of various items of equipment and/or statistical comparisons. Actual conditions can alter the useful life of any item. When an item needs immediate replacement depends on many factors, including previous use/misuse, irregularity of servicing, faulty manufacturer, unfavorable conditions, Acts of God and unforeseen circumstances. Certain components that may be working when we made our inspection might deteriorate or break in the future without notice.
4. To prepare this report, we used historic data on capital activities and costs, blueprints (when available), and current prices for capital actions. We have not independently verified this information, have assumed that it is reliable, but assume no responsibility for its accuracy.
5. Unless otherwise noted in the report, we assume that all building components meet code requirements in force when the property was built.
6. If accessibility issues are referenced in the report, the site elements, common areas, and dwelling units at the development were examined for compliance with the requirements of the Uniform Federal Accessibility Standards (UFAS), and for Massachusetts properties, the Massachusetts Architectural Accessibility Board (AAB). The methodology employed in undertaking this examination is adapted from a Technical Assistance Guide (TAG-88-11) titled “Supplemental Information About the Section 504 Transition Plan Requirements” published by the Coordination and Review section of the U.S. Department of Justice Civil Rights Division, and the AAB Rules and Regulations, 521 CMR effective July 10, 1987. The Guide also incorporates the requirements of UFAS, published, April 1, 1988 by the General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the U.S. Postal Service. Changes in legislation and/or regulations may make some observations moot.

7. Response Actions and estimated costs of responses were developed by ON-SITE INSIGHT, Inc. If additional structural work is necessary, costs for some Response Actions may exceed estimates. Whenever the Response Action is to remove, reposition, or modify walls, a competent structural engineer should be retained before any work is done, because such investigation may disclose that a Response Action is either more costly than estimated, or is not possible.
8. Conclusions reached in this report assume current and continuing responsible ownership and competent property management.
9. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.

Signed,


Signature

Bob Labadini

Name

Senior Associate/Mechanical Specialist

Title

January 28, 2011

Date

Massachusetts School Building Authority

Next Steps to Finalize Submission of your FY 2015 Statement of Interest

Thank you for submitting your FY 2015 Statement of Interest (SOI) to the MSBA electronically. **Please note, the District's submission is not yet complete.** The District is required to print and mail a hard copy of the SOI to the MSBA along with the required supporting documentation, which is described below.

Each SOI has two Certification pages that must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer*. Please make sure that **both** certifications contained in the SOI have been signed and dated by each of the specified parties and that the hardcopy SOI is submitted to the MSBA with **original signatures**.

SIGNATURES: Each SOI has two (2) Certification pages that must be signed by the District.

In some Districts, two of the required signatures may be that of the same person. If this is the case, please have that person sign in both locations. Please do not leave any of the signature lines blank or submit photocopied signatures, as your SOI will be incomplete.

**Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated as the chief executive office under the provisions of a local charter.*

VOTES: Each SOI must be submitted with the proper vote documentation. This means that (1) the required governing bodies have voted to submit each SOI, (2) the specific vote language required by the MSBA has been used, and (3) the District has submitted a record of the vote in the format required by the MSBA.

- School Committee Vote:** Submittal of all SOIs must be approved by a vote of the School Committee.
 - For documentation of the vote of the School Committee, Minutes of the School Committee meeting at which the vote was taken must be submitted with the original signature of the Committee Chairperson. The Minutes must contain the actual text of the vote taken which should be substantially the same as the MSBA's SOI vote language.
- Municipal Body Vote:** SOIs that are submitted by cities and towns must be approved by a vote of the appropriate municipal body (e.g., City Council/ Aldermen/Board of Selectmen) in addition to a vote of the School Committee.
 - Regional School Districts do not need to submit a vote of the municipal body.
 - For the vote of the municipal governing body, a copy of the text of the vote, which shall be substantially the same as the MSBA's SOI vote language, must be submitted with a certification of the City/Town Clerk that the vote was taken and duly recorded, and the date of the vote must be provided.

CLOSED SCHOOLS: Districts must download the report from the "Closed School" tab, which can be found on the District Main page. Please print this report, which then must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer. A signed report, with original signatures must be included with the District's hard copy SOI submittal. **If a District submits multiple SOIs, only one copy of the Closed School information is required.**

ADDITIONAL DOCUMENTATION FOR SOI PRIORITIES #1 AND #3: If a District selects Priority #1 and/or Priority #3, the District is required to submit additional documentation with its SOI.

- l If a District selects Priority #1, Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of the school children, where no alternative exists, the MSBA requires a hard copy of the engineering or other report detailing the nature and severity of the problem and a written professional opinion of how imminent the system failure is likely to manifest itself. The District also must submit photographs of the problematic building area or system to the MSBA.
- l If a District selects Priority #3, Prevention of a loss of accreditation, the MSBA requires the full accreditation report(s) and any supporting correspondence between the District and the accrediting entity.

ADDITIONAL INFORMATION: In addition to the information required with the SOI hard copy submittal, the District may also provide any reports, pictures, or other information they feel will give the MSBA a better understanding of the issues identified at a facility.

If you have any questions about the SOI process please contact Diane Sullivan at 617-720-4466 or Diane.Sullivan@massschoolbuildings.org.

Massachusetts School Building Authority

School District Arlington

District Contact Diane Johnson TEL: (781) 316-3511

Name of School Arlington High

Submission Date 3/23/2015

SOI CERTIFICATION

To be eligible to submit a Statement of Interest (SOI), a district must certify the following:

- The district hereby acknowledges and agrees that this SOI is NOT an application for funding and that submission of this SOI in no way commits the MSBA to accept an application, approve an application, provide a grant or any other type of funding, or places any other obligation on the MSBA.
- The district hereby acknowledges that no district shall have any entitlement to funds from the MSBA, pursuant to M.G.L. c. 70B or the provisions of 963 CMR 2.00.
- The district hereby acknowledges that the provisions of 963 CMR 2.00 shall apply to the district and all projects for which the district is seeking and/or receiving funds for any portion of a municipally-owned or regionally-owned school facility from the MSBA pursuant to M.G.L. c. 70B.
- The district hereby acknowledges that this SOI is for one existing municipally-owned or regionally-owned public school facility in the district that is currently used or will be used to educate public PreK-12 students and that the facility for which the SOI is being submitted does not serve a solely early childhood or Pre-K student population.
- After the district completes and submits this SOI electronically, the district must sign the required certifications and submit one signed original hard copy of the SOI to the MSBA, with all of the required documentation described under the "Vote" tab, on or before the deadline.
- The district will schedule and hold a meeting at which the School Committee will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is required for cities, towns, and regional school districts.
- Prior to the submission of the hard copy of the SOI, the district will schedule and hold a meeting at which the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is not required for regional school districts.
- On or before the SOI deadline, the district will submit the minutes of the meeting at which the School Committee votes to authorize the Superintendent to submit this SOI. The District will use the MSBA's vote template and the vote will specifically reference the school and the priorities for which the SOI is being submitted. The minutes will be signed by the School Committee Chair. This is required for cities, towns, and regional school districts.
- The district has arranged with the City/Town Clerk to certify the vote of the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body to authorize the Superintendent to submit this SOI. The district will use the MSBA's vote template and submit the full text of this vote, which will specifically reference the school and the priorities for which the SOI is being submitted, to the MSBA on or before the SOI deadline. This is not required for regional school districts.
- The district hereby acknowledges that this SOI submission will not be complete until the MSBA has received all of the required vote documentation and certification signatures in a format acceptable to the MSBA. If Priority 1 is selected, your Statement of Interest will not be considered complete unless and until you provide the required engineering (or other) report, a professional opinion regarding the problem, and photographs of the problematic area or system.

Chief Executive Officer *

School Committee Chair

Superintendent of Schools

(signature)

(signature)

(signature)

Date

Date

Date

* Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice. Please do not leave any signature lines blank.

Massachusetts School Building Authority

School District Arlington

District Contact Diane Johnson TEL: (781) 316-3511

Name of School Arlington High

Submission Date 3/23/2015

Note

The following Priorities have been included in the Statement of Interest:

1. ☐ Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children, where no alternative exists.
2. ☐ Elimination of existing severe overcrowding.
3. ☐ Prevention of the loss of accreditation.
4. ☐ Prevention of severe overcrowding expected to result from increased enrollments.
5. ☐ Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6. ☐ Short term enrollment growth.
7. ☐ Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements.
8. ☐ Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

SOI Vote Requirement

☐ I acknowledge that I have reviewed the MSBA's vote requirements for submitting an SOI which are set forth in the Vote Tab of this SOI. I understand that the MSBA requires votes from specific parties/governing bodies, in a specific format using the language provided by the MSBA. Further, I understand that the MSBA requires certified and signed vote documentation to be submitted with the SOI. I acknowledge that my SOI will not be considered complete and, therefore, will not be reviewed by the MSBA unless the required accompanying vote documentation is submitted to the satisfaction of the MSBA.

Potential Project Scope: Renovation/ Addition

Is this SOI the District Priority SOI? YES

School name of the District Priority SOI: Arlington High

Is this part of a larger facilities plan? NO

If "YES", please provide the following:

Facilities Plan Date:

Planning Firm:

Please provide an overview of the plan including as much detail as necessary to describe the plan, its goals and how the school facility that is the subject of this SOI fits into that plan:

Please provide the current student to teacher ratios at the school facility that is the subject of this SOI: 15 students per teacher

Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI: 15 students per teacher

Does the District have a Master Educational Plan that includes facility goals for this building and all school buildings in District? NO

Does the District have related report(s)/document(s) that detail its facilities, student configurations at each facility, and District operational budget information, both current and proposed? NO

If "NO", please note that:

If, based on the SOI review process, a facility rises to the level of need and urgency and is invited into the Eligibility Period, the District will need to provide to the MSBA a detailed Educational Plan for not only that facility, but all facilities in the District in order to move forward in the MSBA's school building construction process.

Is there overcrowding at the school facility? YES

If "YES", please describe in detail, including specific examples of the overcrowding.

Over 27% of core classes (ELA, Math, History, Foreign Language) have 25 or more students. Because of scheduling and staffing constraints, larger classes cannot always be located in larger classrooms, so they are held in classrooms too small for the number of students.

The odd shapes, physical obstructions and small square footage of classrooms require desks to be placed close together so students can see the board, which makes it difficult for students to be seated.

From the HMFH report:

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

As described by one teacher:

The columns create a "challenge." It is because of them that a ceiling-mounted projector cannot be installed and used in her classroom. Therefore she needs to write much more on the white board, having to do and undo information throughout the period. This results in loss of teaching and learning time; she estimates it costs them two to three minutes every class period, this in turn results in 8 - 12 hours per school year.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces,

see Appendix C.

Has the district had any recent teacher layoffs or reductions? NO

If "YES", how many teaching positions were affected? 0

At which schools in the district?

Please describe the types of teacher positions that were eliminated (e.g., art, math, science, physical education, etc.).

Has the district had any recent staff layoffs or reductions? NO

If "YES", how many staff positions were affected? 0

At which schools in the district?

Please describe the types of staff positions that were eliminated (e.g., guidance, administrative, maintenance, etc.).

Please provide a description of the program modifications as a consequence of these teacher and/or staff reductions, including the impact on district class sizes and curriculum.

Does Not Apply

Please provide a detailed description of your most recent budget approval process including a description of any budget reductions and the impact of those reductions on the district's school facilities, class sizes, and educational program.

Budget bottom line is voted by School Committee in early January, Superintendent's proposed budget is submitted to School Committee in early February, budget hearing is held end of February, budget voted by School Committee early March, Town Finance Committee holds hearing in late March, Town Meeting approves budget during spring Town Meeting, beginning at end of April and continuing until concluded. There have been no overall budget reductions since FY11.

General Description

BRIEF BUILDING HISTORY: Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters).

Arlington High School is a sprawling complex that has been built up over the past century. The original 6-story building, now Fusco House, was built in 1914, and now houses classrooms as well as “The Pit,” Old Hall and some offices. The steepled Main Office section was added in 1938, as was Collomb House. These now house the science labs, classrooms, the media center and part of the preschool. Lowe Auditorium, the Blue Gym, the offices and cafeteria, and Downs House (also containing classrooms) were all built in the 1960’s. The Red Gym and the Links Building (with some special education classrooms) were part of the only significant renovation of the buildings. This renovation started in the late 1970’s and was completed in 1981. It also included some window upgrades and space reconfiguration.

Given the age of the buildings, Arlington has focused on keeping the buildings safe and secure for students and faculty. However, addressing areas of concern is an ongoing and ultimately losing process, particularly with exterior masonry. As the On-Site Insight report points out, many systems have reached the end their useful life, and are due for major repairs or replacement.

From the HMFH Report:

A thorough renovation-only of the facility would include (and in part has been identified in the On-Site Insight report as attached):

- Mechanical systems replacement
- *Electrical system upgrades including an increase to the quantity of power outlets (need to eliminate the extensive use of extension cords)
- Light fixture replacement
- *Plumbing upgrades and/or replacement, including fully modernized and accessible toilet facilities, and an increase in quantity of locations and fixtures
- *Solve the water infiltration issue
- *Security upgrades
- *Technology upgrades and integration, including wireless service
- *Audio/visual systems upgrades, including new PA system, simulcast ability, telephones throughout the school, sound systems at Auditorium and Gymnasium, and Auditorium/Stage lighting
- Hazardous material abatement
- Roof replacement
- Exterior door replacement and *tie-in to the security alarm system
- Exterior window replacement
- Finishes replacement including: -flooring (abate and remove remaining vinyl asbestos tile (VAT), replace all with new)
- *ceiling treatment (provide with high acoustic and reflectance quality)
- *wall surfaces (provide durable protection, paint all)
- fixed casework (*include upgrades to plumbing as appropriate)
- *teaching surfaces (white-boards and tack-boards)
- *auditorium seating (replace and provide accessibility)
- corridor lockers and athletic lockers
- *athletic locker room upgrades
- *Accessibility upgrades throughout
- Three new elevators

*Note: these are not included in the scope (or they are minimally included) outlined in the On-Site Insight report.

TOTAL BUILDING SQUARE FOOTAGE: Please provide the original building square footage PLUS the square footage of any additions.

400000

SITE DESCRIPTION: Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site. Please note whether there are any other buildings, public or private, that share this current site with the school facility. What is the use(s) of this building(s)? (maximum of 5000 characters).

Arlington High School is a large complex (nearly 400,000 square feet) centrally located in the community on a four acre site. Its main façade fronts onto Massachusetts Avenue, set back from the road by a green space with mature trees. At the rear of the complex are several athletic fields (baseball, softball, football, and track and field).

Although there are no other structures, there are other programs that occupy the high school beyond those that serve the high school directly. There are town offices, including facilities and custodial offices, Arlington's inclusion preschool program, the school district's administrative offices, and the LABBB Collaborative Program. All told the approximate square footage usage is as follows:

Town Use 6,800 SF

School/Town Facilities 4,600 SF

Pre-School Program 16,600 SF

School District Use (includes METCO Program) 16,700 SF

LABBB Collaborative Program 9,900 SF

Community/ School Storage 10,300 SF

There are also several site-related environmental issues that would impact any renovation plans:

1. Underground culverted stream (Mill Brook) running west to east at rear of AHS complex.
2. Peirce Athletic Field built over heavy metal waste site. Site was contained and is beneath a barrier.
3. Evidence of perchloroethylene (PCE) contamination* of groundwater near and/or under AHS complex. Two rooms in the basement (Rm 105 & old Auto Shop) are closed pending PCE mitigation because of elevated air sample levels.

*http://www.arlingtonma.gov/Public_Documents/ArlingtonMA_Health/MassDEP_AHS_PCE_Report_8_22_11.pdf

ADDRESS OF FACILITY: Please type address, including number, street name and city/town, if available, or describe the location of the site. (Maximum of 300 characters)

869 Massachusetts Avenue, Arlington, MA 02476

BUILDING ENVELOPE: Please provide a detailed description of the building envelope, types of construction materials used, and any known problems or existing conditions (maximum of 5000 characters).

Excerpts from On-Site Insight report:

Arlington High School, located at 869 Massachusetts Avenue in Arlington, MA, is a sprawling facility that was built in several stages. The original buildings date to the early 19th century and are referred to as the Old Buildings (buildings "A" & "B"). These buildings retain historic details common in that era; specifically a tall clock steeple, columned classical entry façade, and slate roof. The so called Freshman Building [Downs] was added in the early 1960s. During the 1980s all of the buildings were connected to form a large interior courtyard.

The buildings are predominantly clad in brick masonry; the Connector section (built in the early 1980s) is clad in colored and textured concrete masonry units. A section of the roof at the Old Building (Bldg B) is pitched and covered with slate shingles. This section also features a wood framed and clad clock steeple and a classically detailed entry portico. The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system. Windows are believed to date from the 1960 and 1980 expansions. Water is infiltrating through the floor of the Old Buildings mechanical room

concrete floor slab. Several sections of masonry and wood stair sets were observed at the high school. The concrete and granite stair sets vary in age and condition. A pressure treated wood stair set is located at the cafeteria courtyard. It is in fair condition. There is a mix of wood and glass, aluminum and glass, sliding glass, and flush panel metal doors throughout the facility. Exterior doors are believed to date from the 1960 and 1980 expansions, and show signs of heavy use. Evidence of repairs (frame reinforcement, added hinges) was observed on many.

Recent repointing and water proofing work was performed on a portion of the facility. Some deterioration noted, peeling paint observed on trip, soffits and fascia on older parts of the building. A painted wood faux balcony accents the main entry of the high school in poor overall condition, with sections of deterioration noted. There are approximately 17 wall mounted LED and HID security flood lights located around the facility of various ages and conditions. Windows are a mix of wood, steel, and aluminum framed models believed to date to the 1960 and 1980 expansions, all exceeding their expected useful service life.

Additional Comments:

The Links Building is elevated, with no insulation beneath. In other parts of the facility there are gaps around the windows, which are unable to be caulked effectively and allow air infiltration. The older windows, damaged exterior doors and uninsulated brick masonry throughout the complex combine to create a very inefficient thermal envelope. This leads to problems with climate control inside the school, as well as high heating bills.

Exterior walls are not seismically reinforced to conform to current codes.

During heavy wind and rain events there is moisture penetration throughout the building envelope. This is addressed first by buckets in halls during the event, and when the event is over, facilities staff search for the source of water and attempt to address it, although it is not always possible to find exact source. Issues associated with water penetration will likely worsen over time.

Has there been a Major Repair or Replacement of the EXTERIOR WALLS? YES

Year of Last Major Repair or Replacement:(YYYY) 1978

Description of Last Major Repair or Replacement:

Part of most recent renovation and upgrade, re-pointing and re-mortaring as needed.

Roof Section A

Is the District seeking replacement of the Roof Section? YES

Area of Section (square feet) 7452

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe)
slate

Age of Section (number of years since the Roof was installed or replaced) 80

Description of repairs, if applicable, in the last three years. Include year of repair:

n/a

Roof Section B

Is the District seeking replacement of the Roof Section? YES

Area of Section (square feet) 10722

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe)
metal standing seam

Age of Section (number of years since the Roof was installed or replaced) 37

Description of repairs, if applicable, in the last three years. Include year of repair:

minor repairs to attached gutters

Roof Section C

Is the District seeking replacement of the Roof Section? YES

Area of Section (square feet) 79278

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

TPO membrane roofing

Age of Section (number of years since the Roof was installed or replaced) 15

Description of repairs, if applicable, in the last three years. Include year of repair:

n/a

Roof Section D

Is the District seeking replacement of the Roof Section? YES

Area of Section (square feet) 25092

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

TPO membrane roofing

Age of Section (number of years since the Roof was installed or replaced) 9

Description of repairs, if applicable, in the last three years. Include year of repair:

n/a

Roof Section E

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

Age of Section (number of years since the Roof was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Roof Section F

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

Age of Section (number of years since the Roof was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Roof Section G

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

Age of Section (number of years since the Roof was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Roof Section H

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

Age of Section (number of years since the Roof was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Roof Section I

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

Age of Section (number of years since the Roof was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Roof Section J

Is the District seeking replacement of the Roof Section?

Area of Section (square feet)**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))****Age of Section (number of years since the Roof was installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section A****Is the District seeking replacement of the Windows Section? YES****Windows in Section (count) 371****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))**

steel/wood framed double hung and casement style windows, no double glazing

Age of Section (number of years since the Windows were installed or replaced) 53**Description of repairs, if applicable, in the last three years. Include year of repair:**

minimal repairs

Window Section B**Is the District seeking replacement of the Windows Section? YES****Windows in Section (count) 565****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))**

aluminum frame fixed panel and awning style windows

Age of Section (number of years since the Windows were installed or replaced) 36**Description of repairs, if applicable, in the last three years. Include year of repair:**

minimal as needed

Window Section C**Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section D****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section E****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section F****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section G**

Is the District seeking replacement of the Windows Section?**Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section H****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section I****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section J****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****MECHANICAL and ELECTRICAL SYSTEMS: Please provide a detailed description of the current mechanical and electrical systems and any known problems or existing conditions (maximum of 5000 characters).**

Please see the On-Site Insight Capital Needs Assessment, completed in August 2013, for detailed information about issues and needs in mechanical and electrical systems. Portions are excerpted below.

From On-Site Insight Report, systems at or beyond their expected service life or in need of extensive repair include:

- Main heating system (most boilers, temperature control, steam plumbing, heat ventilators, etc.)
- Hot water (storage tank, distribution)
- Ventilation/cooling systems (building exhaust fans, rooftop air units)
- Power wiring throughout complex (many classrooms have only one outlet, some have none, wiring inadequate for load)
- All exterior doors, all windows, steeple and balcony
- All interior fire doors, interior steel doors, vinyl tile throughout complex
- Auditorium heating, ventilation and air conditioning system
- Elevator (undersized, and only one for entire complex)

The two central mechanical rooms contain the heating systems. The domestic hot water (DHW) systems are located in separate areas of the facility. The heating system consists of four, gas-fired steam boilers. The condensed (spent) steam is returned to the boilers via a main condensation receiver and several small receiver stations. The DHW system features two gas-fired boilers and one large storage and two smaller storage tanks. The heating systems are controlled by an antiquated pneumatic control systems and compressed air operated steam valves. Compressed air for this system is supplied by two air compressors, one of which was recently replaced. Several sections of the facility are heated using hydronic heat that is created by passing boiler steam through an array of heat exchangers. Hydronic heat circulation is achieved by several base-mounted pump assemblies.

The major building systems include security, fire suppression, heat/ventilation systems, air conditioning, stale air exhaust equipment, emergency egress lighting, fire/smoke detection and notification system, and elevator. The high school features and extensive closed circuit television system (CCTV) for security monitoring. The high school features a limited, street pressure, fire sprinkler system for fire suppression. Classrooms are heated and ventilated by exterior wall mounted ventilators which have exceeded their expected service life. Selected areas of the school building are air conditioned using split-system air conditioners with a SEER rating of 10. The gymnasiums and locker rooms are ventilated and heated by interior mounted, steam heated, air handler units, which have exceeded their expected service life. Several section of the Old Building (A & B) feature "J. C." roof mounted, hydronically heated, makeup air units which have exceeded their expected service life. An array of roof mounted exhaust fans remove stale air from the building, about half of which have been recently replaced. The electrical distribution system of the high school varies widely in age, manufacture, and condition. The emergency egress lighting is a mix of wet and dry cell battery powered fixtures, varying in age and condition. There are three smoke/fire detection systems at the facility, all recently replaced. There is one hydraulic elevator which serves all floors of the facility. The elevator is located in the oldest (A) building.

Please see the On-Site Insight report for greater detail.

From HMFH Report:

The complex has just one, antiquated elevator and for a school building of this size, it does not provide adequate and equal accessibility, in that it is not convenient for the intended users and it does not provide access to all of the building's floor levels.

Additional comments:

There is a lack of outlets in the Downs Building, leading to the use of extension cords. There are shortcomings with electrical distribution throughout the Downs Building, where distribution panels are old and parts are unavailable. When issues occur, electrical demand is reduced until the panel can be replaced during the summer break.

Univents in the Downs Building need to be replaced as they are beyond their useful life. This impacts air quality in Downs Building. In addition, there is no provision for air exchange in some corridors throughout the building, which is non-compliant with current standards. The cafeteria has an inadequate mechanical exhaust system; staff addresses air quality by opening doors to the interior courtyard.

Half of the building complex is heated with steam pipes. The steam condensate collection and return system needs to be replaced per On-Site Insight. The steam system, especially return pipes, needs constant repairs and maintenance due to the aging piping system. Adding virgin water to system due to leaks degrades pipes over time. Fortunately, there have been no injuries due to steam.

Only the high school and central administration areas, and the computer rooms, have air conditioning.

Boiler Section 1

Is the District seeking replacement of the Boiler? YES

Is there more than one boiler room in the School? YES

What percentage of the School is heated by the Boiler? 25

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

natural gas

Age of Boiler (number of years since the Boiler was installed or replaced) 50

Description of repairs, if applicable, in the last three years. Include year of repair:

ongoing maintenance typical of their age

Boiler Section 2

Is the District seeking replacement of the Boiler? YES

Is there more than one boiler room in the School? YES

What percentage of the School is heated by the Boiler? 25

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

natural gas

Age of Boiler (number of years since the Boiler was installed or replaced) 50

Description of repairs, if applicable, in the last three years. Include year of repair:
ongoing maintenance typical of its age

Boiler Section 3

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 4

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 5

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 6

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 7

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 8

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 9

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Boiler Section 10

Is the District seeking replacement of the Boiler?

Is there more than one boiler room in the School?

What percentage of the School is heated by the Boiler?

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Age of Boiler (number of years since the Boiler was installed or replaced)

Description of repairs, if applicable, in the last three years. Include year of repair:

Has there been a Major Repair or Replacement of the HVAC SYSTEM? YES

Year of Last Major Repair or Replacement:(YYYY) 2013

Description of Last Major Repair or Replacement:

Administrative 6th floor had replacement of 15 window unit air conditioners replaced with centralized, energy efficient system.

Has there been a Major Repair or Replacement of the ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM? YES

Year of Last Major Repair or Replacement:(YYYY) 1978

Description of Last Major Repair or Replacement:

No major upgrades since last renovation.

BUILDING INTERIOR: Please provide a detailed description of the current building interior including a description of the flooring systems, finishes, ceilings, lighting, etc. (maximum of 5000 characters).

From On-Site Insight report:

Interior walls include painted CMU, glazed facing tile, and painted gypsum wall board (some with metal sheathing to limit damage).

Interior spaces include hallways, classrooms, support learning areas; cafeteria and commercial kitchen; two gyms, weight room and locker/shower facilities; auditorium and stage area; school offices, school department offices, and restrooms. Most these areas have vinyl composite tile (VCT) flooring. With the exception of approximately 2%, which has been recently replaced by the maintenance staff, the VCT has exceeded its expected useful service life. Many worn areas were observed. Most of the interior fire doors are failing in that hinges have been replaced a number of times and the doors are now dragging and will not provide protection they were originally intended to provide. The interior lighting was upgraded, in phases, to all fluorescent fixtures in the past. The fluorescent lighting is a mix of different ages and bulb types. Metal recessed lockers throughout the hallways of the school's buildings, varying widely in age and condition. Stairs are covered with rubber flooring and treads in various conditions. Doors are double metal fire rated types in various conditions. Classrooms vary in size and use. Floors are VCT and the walls and ceilings are painted surfaces. Each classroom has a set of wood cabinets and shelving. Science and technology classrooms also feature furnishing specific to their individual needs. The Auditorium features acoustic wood paneled walls and some small areas of painted drywall; the ceiling is a painted surface. Flooring is a mix of replaceable wood stage paneling (considered an operating expense), carpeted aisles, and sealed concrete (under the seats). Restrooms feature painted walls and ceilings, ceramic tile floors, and standard institutional grade fixtures. Portions are aged metal types in poor condition. Some partitions have been replaced with heavy duty PVC paneling. Fixtures and accessories have been replaced on an as needed basis.

Additional Comments:

There are an insufficient number of restroom facilities for the population size. The auditorium lacks handicap-accessible seating and nearby handicap-accessible toilets can only be accessed by passing through multiple fire doors. Plaster on the auditorium ceiling has fallen down on two occasions.

PROGRAMS and OPERATIONS: Please provide a detailed description of the current programs offered and grades served, and indicate whether there are program components that cannot be offered due to facility constraints, operational constraints, etc. (maximum of 5000 characters).

Arlington High School offers a rigorous academic program with options for all students. Graduation requirements include four years of English, three years of Math, Science, History / Social Studies, and PE/Health, one year of Fine Arts, two years of a Foreign Language, and 40 hours of Community Service.

Class work is student-centered and staff work hard to ensure students leave with strong teamwork skills, well-developed oral presentation skills, and high mastery of individual content areas. Students are expected to utilize current technology (PowerPoint, Excel, etc) in their school work. All Science courses have labs incorporated into the curriculum. AHS partners with Syracuse University's Project Advance Program in a dual enrollment Economics course.

The school complex has significantly changed since the first building was constructed in 1914. Nearly 100 years of expansion, additions, and re-configurations have resulted in layers and layers of re-purposed and retrofitted classrooms that are forced to fit into a space that is incompatible with today's teaching methods.

Following are some of the programmatic constraints of the facility:

- The Media Center/Library has been divided in half to accommodate academic support rooms, a music classroom and a substantially separate Special Education classroom.
- Many classrooms contain pillars that not only obstruct student and teacher views, but also severely limit accessibility and usable space in the classroom.
- Undersized classrooms prevent small group collaboration, forcing students to meet in small groups in hallways and stairwells.
- The facility impedes technology implementation; particularly for WIFI and ceiling mounted projectors.
- Inadequate wiring and insufficient electrical outlets in classrooms result in frequently tripped circuit breakers from simultaneous use of projection and computer equipment.
- Inadequately sized science labs do not provide enough lab workstations for all students to perform experiments safely at the same time.
- Two rooms in basement (old Auto Shop and one classroom) are closed due to environmental concerns (PCE). These rooms provide the only access to the courtyard garden, and thus limit environmental studies offerings.
- The Visual Arts Department lacks a studio, and classrooms are too small to provide storage for projects such as clay and sculpture, constraining art offerings.
- Inadequate classroom space impedes the ability to provide sufficient support services.
- Inadequate small group meeting spaces hinder the ability of student groups and teachers to collaborate.

Arlington's state mandated inclusion preschool resides in the high school. Its space has limitations:

- Poor classroom configuration obstructs collaboration and service delivery.
- Tiny therapy rooms lack windows.
- Building structure is not designed for preschool uses (sizes of bathroom fixtures, shared entrance).
- Preschool classrooms are not adjacent to each other.

From HMFH report:

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. (For a diagram of the program layout, see Appendix C.) Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to

discuss interdisciplinary teaching plans and the students in their charge.

Following are the presently known missing and/or inadequate educational spaces:

- Science: additional classrooms and specifically Biology classrooms
- A flexible modern library “learning commons” to serve as central meeting, collaboration, study, support, and presentation space
- Culinary Arts: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- Music: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education: Health classroom and Dance studio
- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom

CORE EDUCATIONAL SPACES: Please provide a detailed description of the Core Educational Spaces within the facility, a description of the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, a description of the cafeteria, gym and/or auditorium and a description of the media center/library (maximum of 5000 characters).

Only 23% of general classrooms meet the minimum MSBA size requirement of 825-950 SF. 20% of all classrooms are irregular shaped and/or have obstructions, conditions which negatively affect teaching and pose safety and accessibility concerns. Science labs are undersized, averaging 1,000SF.

The Media Center/Library is centrally located within the complex and is comprised of multiple sections: a 1000 SF hallway, two “open concept” class/lab spaces, a teacher resource room, and other work space. Due to its location, and as a result of the facility's convoluted hallways and stairwells, it is used as a pathway to get from one place to another. This traffic causes severe disruption, but there is no better way to configure the area. The Media Center is divided into multiple spaces without clear lines of sight. There are no areas with sound containment for classes or small group meetings.

From HMFH report:

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces,

see Appendix C in the Analysis of Programmatic Needs.

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").
- Telephones: for security, telephones are required in every teaching space.
- PA system: the current system is outdated, does not access all of the building, creating a safety risk, and is extremely jarring to the occupants.
- Sinks and eyewash/ shower stations: a sufficient quantity of sinks, appropriately located, is required for sanitary, safety, and project-based learning; operating eyewash/ shower stations are required at all Science classrooms.
- Flexible, movable furnishings: Science classroom furniture is bolted to the floors creating a rigid and often inappropriate classroom layout.
- Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading
- Spaces for small, pull out services for Special Education

CAPACITY and UTILIZATION: Please provide a detailed description of the current capacity and utilization of the school facility. If the school is overcrowded, please describe steps taken by the administration to address capacity issues. Please also describe in detail any spaces that have been converted from their intended use to be used as classroom space (maximum of 5000 characters).

Currently the high school has an enrollment of 1294, which is expected to reach 1684 by 2025, an increase of 30%. This enrollment growth projection is based on both existing students currently in our schools and very young children presently living in town. We have seen the entire district grow at or above 2% in four of the last six years. Should growth continue at that pace, it will exceed these projections and place even more enrollment pressure on the high school.

Based on existing students, there are already scheduling difficulties and an inability to match size of class and classroom. In 2014-15, the high school hired an additional four teachers, further increasing utilization rates and scheduling pressures. The school plans to hire at least one additional teacher, and possibly more, in 2015-2016.

Classrooms in each department are utilized all class periods in order to provide additional sections to help reduce class sizes. Some classrooms have been divided in half to create more classroom spaces. For example, in the World Languages Department, one divided classroom of approximately 400 square feet currently hosts classes of 25 students. Many non-traditional classroom spaces have been converted for student use, including: the choir room (occupying backstage area of theater), band room (formerly a classroom), Media Center/Library (divided in half for use as classrooms such as Learning Center, Music Technology, Transition Program, Special Education), and a storage room that was converted to a classroom.

There is no space in the high school large enough to meet with the entire student population; the auditorium seats approximately 900 and the gyms are not large enough to seat all students. Similarly, the only meeting space large enough for the entire faculty to meet and work together is the cafeteria, which is not conducive for that purpose. The facility houses Arlington's state-mandated inclusion preschool. This program is also a lab for the high school's academic program that offers courses in early childhood development.

Additionally, the high school continues to examine and implement innovative programs, some of which can help mitigate

burgeoning student enrollment. On-line courses, internships, capstone projects and an alternative high school program to be offered off-site but nearby, are a few examples of these approaches.

The space occupied by various Town offices (Retirement, Information Technology, Building Maintenance) is not felt to be appropriate for classroom use due to its limited size, lack of accessibility and lack of natural light.

From the HMFH report:

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally, the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Small-group rooms and break-out spaces allow for differentiated instruction; currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of spaces for support services such as guidance and special education.

The high school is already experiencing overcrowding in the classrooms and it does not have sufficient classrooms for the number of teachers in the building. As the number of teachers is expanded to respond to very large class sizes, it will increasingly be difficult to schedule classes into existing classrooms, some of which are already booked for every period. Support services, such as toilet facilities, shared storage rooms and faculty workrooms are few and far between, which has a significant impact in a building of this size.

Additionally, student services such as guidance, social work, METCO program, and administrative oversight, would benefit from an analysis identifying their best locations. In some instances they need to be readily accessible throughout the building while in others, for privacy and comfort, need to be a bit more tucked away.

MAINTENANCE and CAPITAL REPAIR: Please provide a detailed description of the district's current maintenance practices, its capital repair program, and the maintenance program in place at the facility that is the subject of this SOI. Please include specific examples of capital repair projects undertaken in the past, including any override or debt exclusion votes that were necessary (maximum of 5000 characters).

The Maintenance Department consists of a Supervisor, three carpenters, two electricians, one plumber, and two construction/handymen. Job requests are submitted and managed via an electronic help desk. This Maintenance Department is responsible for both the Town and the School District.

Capital requests come from facilities studies, Department Directors and the Superintendent of Building Maintenance. Projects include roofs, boilers, flooring, doors, construction infrastructure projects, security upgrades, heating and ventilating equipment replacement, etc.

The School Maintenance Department has preventative maintenance programs in place for boilers, ventilation systems, fire alarms, fire sprinklers, elevators and roofs.

The Town Manager is responsible for submitting a five-year capital plan to the Selectmen each year, with input from the schools and other departments. The goal of the Capital Planning Committee is to provide a means of planning for the maintenance and/or improvement of the capital assets and infrastructure of the Town.

The following is a summary of some of the projects done to keep the building in working order:

Fire Protection and Security: Alarm panels have been upgraded and an addressable system has been installed in part of the building. Carbon monoxide detectors are being added this summer.

Building Security: The district has installed 28 surveillance cameras and four door entrance proximity readers. Doors have been secured by removing exterior handles where exiting is the only requirement. This reduces attempts at break-ins.

ADA Compliance: In the past year, an additional curb cut was installed, along with two handicap parking places, in addition to an adjacent electronic door opener.

Hazardous Materials: The district contracts with licensed vendors for asbestos abatement as needed.

Building Structure and Envelope: Ceiling cracks are repaired as needed. Floor tiles and stair nosings are replaced as needed. After heavy rain and moisture penetrations, the maintenance department performs spot re-pointing on masonry and applies spray-on waterproofing.

Electrical: Improvements to the electrical system are completed when necessary and if it is possible to retrofit into existing electrical systems.

HVAC: In addition to replacing two of the four boilers in the building, a \$100,000 upgrade to the existing Energy Management System is currently being installed. This installation will improve the current situation, but not fix all HVAC problems.

Priority 3

Question 1: Please provide a detailed description of the "facility-related" issues that are threatening accreditation. Please include in this description details related to the program or facility resources (i.e. Media Center/Library, Science Rooms/Labs, general classroom space, etc.) whose condition or state directly threatens the facility's accreditation status.

The NEASC letter of September 2013 cited the following facilities issues when it put AHS on warning status:

Curriculum-related:

- the negative impact of the facility on the delivery of the school's written curriculum
- the insufficient number and size of general classrooms and art classrooms
- the layout and design of classrooms with columns and posts that limit students' vision and obstruct their movements
- the insufficient size and design of science labs
- the need for the increased availability of a full range of technology

Community-resource related:

- the school site and plant that minimally support the delivery of the school's high quality educational programs and services
- the poor condition and lack of cleanliness of the building
- the lack of handicap access and egress to the facility
- the lack of ADA compliance in the auditorium and in "the pit"
- the closure of a classroom due to environmental concerns
- the worn, broken, and poor condition of desks and tables, and lab supplies that are not up to current standards

From the NEASC Report:

Arlington High School is a complex of three buildings. The space for programs and services is crowded and show signs of age, wear, and inadequate maintenance. There is insufficient classroom and lab space to support the curriculum. Quality instruction is being delivered by teachers in spite of the impediments of a crowded and deteriorating building. Although students and teachers have pride in the programs at AHS, the advanced age of the building shows significant signs of wear and tear. Science labs are not sufficient in size or design for some classes that have larger enrollments. Columns and posts in rooms obstruct student vision and movement. Media center renovations have created a space for student collaboration and the use of technology and the facility is used extensively before, during and after school. The school has significant gym and workout space with a variety of programs available. Classrooms are insufficient in number and size especially in science and art classrooms, where class size exceeds the number of available stations in some classrooms. Students are able to achieve educational goals and objectives in spite of a facility with significant needs.

Deficiencies in science laboratory safety, handicap entrance and egress, and fire drill procedures exist as a part of the physical plant. Science laboratories either have no or limited access to eyewash stations/ showers or eyewash stations/ showers that have no documentation of inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements.

From the HMFH report:

We have identified existing space deficits, including size, quantity, configuration, obstructions, technology and other necessary features, and location within the school building. What has not been identified are the additional educational spaces required to continue to allow Arlington High School to achieve excellent academic results:

- Science requires: additional classrooms and specifically Biology classrooms
- A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space.
- Culinary Arts requires: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education requires: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more

secure counseling spaces

- Music requires: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education requires: Health classroom and Dance studio
- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

Priority 3***Question 2: Please describe the measures the district has taken to mitigate the problem(s) described above.***

Since the time of this report, we have been able to fill the Day Custodial Supervisor position (which at the time of the NEASC visit had been vacant for five months) and we have added a Night Custodial Supervisor position as well. The strengthening of oversight in the custodial area has made tremendous improvements to the cleanliness of the high school, and in fact raised the bar on the cleanliness of the district as a whole.

Additionally, school administration and School Committee have been working with Town officials and volunteers through the Capital Planning Committee, the Long Range Planning Committee, the Finance Committee and other groups to raise awareness of the need for radical improvement to the high school facility. A capital needs assessment was commissioned and completed by On-Site Insight to evaluate the purely physical needs of the high school complex. HMFH was also engaged to work with the high school faculty to develop a concise statement of programmatic needs. It was widely felt that both of these reports would aid the School Department in gaining community awareness and support for a much needed project, in advance of a formal application to the MSBA.

Priority 3

Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem(s) identified.

From NEASC Report:

The size and number of classrooms is insufficient. The condition of the facilities limits the staff's ability to implement the curriculum. Columns and posts in rooms obstruct student vision and movement. Science labs are not sufficient in size or design for some classes that have larger enrollments. Deficiencies in science laboratory safety and handicap entrance and egress exist in the facility. Science laboratories either have no or limited access to eyewash stations/showers or eyewash stations/showers that have no documentation of current inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements.

From HMFH Report:

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. (For a diagram of the program layout, see Appendix C.) Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to discuss interdisciplinary teaching plans and the students in their charge.

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- 1 Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- 1 Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").

- 1 Simulcast ability: the ability to broadcast to multiple areas of the building creates wide-reaching opportunities for learning.
- 1 Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- 1 Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading to shortages in the system.

Please consult the full attached reports for greater detail which support the NEASC Recommendations, which include:

- 1 Develop and implement a long-range plan, with a timeline for completion and a source of funding, to completely address school facility needs.
- 1 Address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards.
- 1 Address all health and safety issues including science labs, egress plans for evacuation, and handicap accessibility.

Please also provide the following:

Name of accrediting entity (maximum of 100 characters):

NEW ENGLAND ASSOCIATION OF SCHOOLS & COLLEGES, INC. COMMISSION ON PUBLIC SCHOOLS (NEASC)

Current Accreditation Status: Please provide appropriate number as 1=Passed, 2=Probation, 3=Warning, 4=Lost:

3

If "WARNING", indicate the date accreditation may be switched to Probation or lost: 10/1/2014

If "PROBATION", indicate the date accreditation may be lost:

Please provide the date of the first accreditation visit that resulted in your current accreditation status.:

4/7/2013

Please provide the date of the follow-up accreditation visit: 10/1/2014

Are facility-related issues related to Media Center/Library? If yes, please describe in detail in Question 1 below.:

YES

Are facility-related issues related to Science Rooms/Labs? If yes, please describe in detail in Question 1 below.:

YES

Are facility-related issues related to general classroom spaces? If yes, please describe in detail in Question 1 below.: YES

Are facility-related issues related to SPED? If yes, please describe in detail in Question 1 below.: YES

Are facility-related issues related to support spaces? If yes, please describe in detail in Question 1 below.:

YES

Are facility-related issues related to "Other"? If yes, please identify the other area below and describe in detail in Question 1 below.: NO

Please describe (maximum of 100 characters).:

Priority 4

Question 1: Please describe the conditions within the community and School District that are expected to result in increased enrollment.

Based on a five year weighted average to measure continuity rates from grade to grade, the Arlington Public Schools are anticipating significant space pressure at both the middle and the high school buildings. Since 2000 the district has grown 28%, from 4165 to 5326 students. Much of this growth has been concentrated at the elementary level. Projecting forward in time while using current continuity rates, high school enrollment of 1294 is projected to rise to 1430 in five years and 1684 in ten years. At the same time, enrollment at the Ottoson Middle School is projected to rise from the current level of 1125 (above the design capacity of 1050), to 1303 in five years and 1490 in ten years. These enrollment growth projections are based on existing students currently in the schools and very young children presently living in town. The entire district has actually grown at or above 2% in four of the last six years. Should growth continue at that pace, it will exceed these projections and place even more enrollment pressure on the district.

Please see the attached Enrollment Projection spreadsheets.

Priority 4

Question 2: Please describe the measures the School District has taken or is planning to take in the immediate future to mitigate the problem(s) described above.

Arlington has experienced steadily increasing enrollment at all grade levels since 2000. To alleviate space needs at the high school, and to improve conditions for Arlington's state-mandated inclusion preschool, efforts were made to design a suitable early childhood space during the reconstruction of the Thompson School. Unfortunately, size constraints of the site and available funding from the Town made this impossible. The preschool is currently housed in the high school, in a space not well designed to accommodate a preschool's needs, nor able to provide the needed additional space as the program continues to expand.

At the elementary level, although our newest school was built with a larger capacity to help absorb the influx of new elementary students, the Thompson school is presently enrolled above its design capacity. Arlington has redistricted its elementary schools and instituted buffer zones between the neighborhood school districts. This redistricting helped to shift the student population away from densely populated schools and redistribute it more evenly. The creation of buffer zones allows district administration to have some ongoing flexibility in the allocation of students in the future.

As this much larger elementary population ages up, the district expects overcrowding at both the middle and the high school. The middle school is already over its design capacity of 1050 students, and is expected to reach 1430 in five years. However, of the two buildings, the high school is in much greater need of a thorough renovation and reconstruction. It is also situated on a larger parcel of land. One possible solution to enrollment pressure in both places would be to create an eighth grade academy within a reconstructed high school. Moving the eighth grade class out of the middle school would reduce the enrollment to slightly below the middle school's design capacity for the foreseeable future without the need for further expansion on a very space-limited site. Another option for reducing enrollment pressure at the middle school or high school might include temporary classrooms until additional classrooms can be built later, if necessary.

Additionally, the high school continues to examine and implement innovative programs, some of which can help mitigate burgeoning student enrollment. On-line courses, internships, capstone projects and an alternative high school program to be offered off-site but nearby, are a few examples of these approaches.

Please see the attached projection sheets for further details on anticipated enrollment.

Priority 4

Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.

From the HMFH report:

Arlington High School was constructed for a different time in education than what is expected today, let alone what will be required into the foreseeable future. 21st century schools are all about technology, inter-connectedness, collaboration, interaction, hands-on learning and making, experiences, teamwork, and interpersonal skills. The excellent teaching staff at the high school knows this and accomplishes much within the constraints of the antiquated facility. It is time to look to the future and to make every effort to create an environment that supports the dynamic teaching at Arlington High School.

School buildings need clear way-finding and be navigable by all, student and visitor alike. Schools need to have spaces in a variety of sizes that are adjacent to one another to provide appropriate space for differentiated learning styles. The spaces need to be flexible in terms of variety of sizes, and a level of consistency among the amenities. The teaching spaces need to be supported by today's teaching tools, such as ceiling projectors, wireless, and the like. Schools must achieve these goals in an environment that is at the same time, inviting, open, secure, and supervised. When thinking of any building today, but perhaps most especially buildings used for educating students, we need to be planning sustainably, using our existing resources wisely, and thinking even further into the future about what else may need to be accommodated on the high school site. Designing sustainably means with the outdoor, as well as the indoor, environment in mind, while creating a long-lasting, low-maintenance, well-planned facility to accommodate flexibility and growth.

Schools need to be safe and secure havens for all that enter. Simple things like signage, color, exposure to natural light, connection through views to nature and the surroundings, combine to create a secure, understandable environment in which today's and tomorrow's student learn and grow. These are possible to achieve within a thorough, thoughtful renovation, but they need to be planned for and supported by the community's resources in order for the high school to best support the youth of Arlington into the coming decades.

Please also provide the following:

Cafeteria Seating Capacity:	450
Number of lunch seatings per day:	3
Are modular units currently present on-site and being used for classroom space?:	NO

If "YES", indicate the number of years that the modular units have been in use:

Number of Modular Units:

Classroom count in Modular Units:

Seating Capacity of Modular classrooms:

What was the original anticipated useful life in years of the modular units when they were installed?:

Have non-traditional classroom spaces been converted to be used for classroom space?:	YES
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If "YES", indicate the number of non-traditional classroom spaces in use: 13

Please provide a description of each non-traditional classroom space, its originally-intended use and how it is currently used (maximum of 1000 characters):

Band room was originally large classroom.

Three work areas and lounges built in 1914 now used as classrooms.

Academic support classrooms, music classroom, Special Education classroom all carved out of Library/Media Center space.

Two therapy offices and METCO Director office made from 1914 auditorium balcony.

“The Pit” a subterranean athletic practice area with poor acoustics, often used as classroom when classes need a large space.

Two storage closets converted to therapy rooms for preschool students.

Please explain any recent changes to the district’s educational program, school assignment policies, grade configurations, class size policy, school closures, changes in administrative space, or any other changes that impact the district’s enrollment capacity (maximum of 5000 characters). :

At the elementary level, the newest school was built with a larger capacity to help absorb the influx of new elementary students. Arlington has redistricted its elementary schools and instituted buffer zones between the neighborhood school districts. This redistricting helped to shift the student population away from densely populated schools to redistribute students more evenly. The creation of buffer zones allows the district administration to have some ongoing flexibility in the allocation of students in the future.

What are the district’s current class size policies (maximum of 500 characters)?:

There is no specific policy regarding class size, although efforts are made to have elementary classes of 24 or less and secondary classes of 26 or less.

Priority 5

Question 1: Please provide a detailed description of the issues surrounding the school facility systems (e.g., roof, windows, boilers, HVAC system, and/or electrical service and distribution system) that you are indicating require repair or replacement. Please describe all deficiencies to all systems in sufficient detail to explain the problem.

Please see the attached On-Site Insight report, section 2 (page 8-29) and section 3 (page 40-56) for a report of the existing deficiencies in the high school facility systems. Of particular note is the Executive Summary Dashboard on page 5, which shows that the vast majority of needed improvements are so urgent that they should be scheduled in the first year of the plan.

Building Security

The school manages 35 exterior entrances that contain 50 separate doors. These doors have been repaired and upgraded to make them more secure. However, monitoring access to the school's doorways is complicated both during and outside of school hours. None of these doors are alarmed and retrofitting alarms to all the exterior doors with alarms and motion sensors would cost over \$200,000.

The school has many entrances, long hallways and connecting passages, with blind endings and hidden corners. Page 8 of the HMFH report outlines in detail the security risks posed by this situation, including that long stretches of hallway are without occupied space and therefore without supervision. An additional risk of the configuration of the school noted by HMFH is that it is easy to become lost and disoriented, and that it can be a challenge to find the best egress path. In addition, telephones are not available in all classrooms and the public address system is outdated, posing a safety risk in the event of an emergency. There would "no room-to-room communication" without 2-way radios that have been distributed throughout the building. Only these radios allow staff to communicate across a wide-ranging facility with instant connection in case of emergencies.

The High School has 28 security surveillance cameras, divided between interior and exterior. Some of the 16 exterior cameras cover more than one door. Picture quality is not good when dealing with distances and darkness. Newer cameras with more mega-pixel capability would perform better. More modern features are available that allow better identification of individuals and motor vehicles, stronger zoom functions, and a greater ease of use. All of these functions would greatly improve the security functionality of these cameras. These improvements, as well as relocating and adding some cameras, would also necessitate an investment in a new server and software that would bring the High School to an enterprise class infrastructure.

ADA Compliance

While there are four accessible entrances/exits in the building, there remain challenges for disabled students and staff. There is only one elevator in the 400,000 square feet of the complex. It can take more time than is available between classes to travel if one needs an elevator, potentially impacting class time. The elevator is also aging and not entirely reliable. Certain areas of the school are inaccessible. The Pit, the stage in the little theater, and the stage in Old Hall cannot be reached by wheelchair. Also, no accessible student bathrooms are near the auditorium, causing hardship.

Fire Suppression

Fire suppression systems are not all at the same level throughout the school. Some parts of the school have sprinklers, but the Downs Building does not, and there are no plans to install them given the state of that wing. Fire alarm protection exists in all buildings, which detect smoke and heat. Upgrades to the system to include carbon monoxide detection have begun. However, only 20% of the fire alarm system is a modern, addressable system. Therefore, most of the building relies on a more antiquated system that potentially increases the time required to address a fire.

emergency in the building. Page 9 of the HMFH report outlines concerns about the fire alarm system, concluding that whole areas of the building would not be aware of an emergency in another area of a building if staff relied solely on the fire alarm system. In addition, Smoke doors in corridors and fire doors at stairs are not working per manufacturer's specifications. All interior fire doors, interior steel doors, vinyl tile throughout complex

Building Envelope

Exterior masonry is in need of major repairs given its age. The On-Site Insight report (page 60) states that the cost of building architectural repairs would be \$12 million.

During heavy wind and rain events there is moisture penetration throughout the building envelope. This is addressed first by buckets in halls during the event, and when the event is over, facilities staff search for the source of water and attempt to address it, although it is not always possible to find the exact source. Issues associated with water penetration will likely worsen over time.

Many windows are original to the buildings, most are single paned, and are not energy efficient. This leads to uneven temperatures in the building. Additionally, there are significant deficiencies in insulation and air sealing due to the types and ages of building construction.

Stress cracks appear in interior masonry block cell ceilings. Again, these issues are addressed as they occur, but it is an ongoing and increasing concern.

These factors create a very inefficient thermal envelope that works against good climate control. It is impossible to maintain an optimal temperature in most of the building.

There are tripping hazards where there are cracked floor tiles, and missing or broken stair nosings. Addressing this is a constant process.

Hazardous Materials

Asbestos is in tiles and pipe coverings throughout the building. If there is a risk of asbestos becoming friable, abatement is done in accordance with AHERA compliance standards.

The plumbing has lead soldered joints that could become a problem as standards change.

Electrical

Even though electrical service into the building was done over in 1980, power wiring throughout the complex present multiple concerns. There is a lack of outlets in the Downs Building where many classrooms have only one outlet leading to the use of extension cords. There are even some classrooms without an outlet. There are shortcomings with electrical distribution throughout the Downs Building, where distribution panels are old and parts are unavailable. When issues occur, electrical demand is reduced until the panel can be replaced during the summer break.

Gas

In some science labs, the gas shut off valve is in another room, causing a safety concern. This is part of the HMFH report, on page 9.

HVAC System

Univents in the Downs Building need to be replaced because they are beyond their useful life. This impacts air quality in Downs Building. In addition, there is no provision for air exchange in some corridors throughout the building, which is non-compliant with current standards. The cafeteria has an inadequate mechanical exhaust system; staff addresses air quality by opening doors to the interior courtyard.

There are two boiler rooms for the school, each containing two boilers. When all boilers were due for replacement, one boiler in each room was replaced. The newer boilers are used alone when weather is milder, while the older

boilers are also brought on line during colder weather. Therefore, with persistent cold weather the school is relying on two boilers that have exceeded their expected life. See page 13 in the attached On-Site Insight report which suggests replacing both boilers.

Half of the building complex is heated with steam pipes. The steam condensate collection and return system needs to be replaced per On-Site Insight. The steam system, especially return pipes, needs constant repairs and maintenance due to the aging piping system. Adding virgin water to system due to leaks degrades pipes over time. As of yet, there have been no injuries due to ruptures in the steam delivery system.

The building has no air conditioning, except for the high school and central administration areas, and the computer rooms. This lack of air conditioning leads to extremely uncomfortable learning situations during late spring and June, and at the start of school.

Other systems at or beyond their expected service life or in need of extensive repair include:

- Main heating system (boilers, temperature control, steam plumbing, heat ventilators, etc.)
- Hot water (storage tank, distribution)
- Ventilation/cooling systems (building exhaust fans, rooftop air units)
- All exterior doors, all windows, steeple and balcony, elevator
- Auditorium heating, ventilation and air conditioning system
- Auditorium carpeting and seating
- Science labs (including showers, eyewash stations, ventilation and fume hoods)
- Classroom cabinetry, shelving
- Restrooms and locker rooms
- Exterior walls are not seismically reinforced to conform to current codes.

Priority 5

Question 2: Please describe the measures the district has already taken to mitigate the problem/issues described in Question 1 above.

Ongoing emergency repairs are made to protect health and safety. Beyond that, systems have been replaced or upgraded as they fail. In 2013, the district also commissioned a Capital Needs Assessment by On-Site Insight to better inform our planning for future capital allocations necessary for repair and replacement of equipment.

Building Security

The district has installed 28 surveillance cameras and four door entrance proximity readers. Doors have been secured by removing exterior handles where exit is the only requirement. This reduces attempts at break-ins.

Fire Protection and Security

Alarm panels have been upgraded and an addressable system has been installed in part of the building. Carbon monoxide detectors are being added this summer. The district complies with all state and local requirements on fire protection equipment and systems.

ADA Compliance

In the past year, an additional curb cut was installed, along with two handicap parking places, in addition to an adjacent electronic door opener.

HVAC

As noted in the previous section, two boilers of four have been replaced in the past five years, as their predecessors were failing. In 2013, a significant renovation of the HVAC system was made to the administrative offices on the sixth floor to reduce energy consumption, stabilize heating and cooling, and improve the circulation of fresh air. This was funded in part by a Green Communities grant from the state. In order to better control the aging HVAC system, a \$100,000 upgrade to the existing Energy Management System is currently being installed. This installation will improve the current situation, but not fix all HVAC problems.

To bring the HVAC system to today's standards, the high school would need an upgraded HVAC system that would cost many millions of dollars.

Hazardous Materials

The district contracts with licensed vendors for asbestos abatement as needed.

Building Structure and Envelope

Ceiling cracks are repaired as needed. Floor tiles and stair nosings are replaced as needed. After heavy rain and moisture penetrations, the maintenance department performs spot re-pointing on masonry and applies spray-on waterproofing.

Electrical

Improvements to the electrical system are completed when necessary and if it is possible to retrofit into existing electrical systems.

Priority 5

Question 3: Please provide a detailed explanation of the impact of the problem/issues described in Question 1 above on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.

Deficiencies in the high school heating, electrical and other systems combine to create an increasingly disruptive learning environment. Although staff and students excel at work-arounds and make-dos, the attention and energy these problems cause take away from attention paid to teaching and learning. As reported by the Principal: "There is not a day when administration does not have to spend time on building related issues." In addition, everyday students with mobility challenges experience delays in getting to class. On stormy, windy days, classes are interrupted by teachers and custodians placing buckets in hallways and mopping floors as water gets into the building.

Examples of heating and cooling problems: During the protracted cold spell this winter, teachers and students in several classrooms had to be relocated because of lack of heat in their rooms due to boiler failure or broken controls.

- ┆ In some classrooms it can take 24 hours for the heat to reach the level set by the thermostat, if it achieves that level at all. Other classrooms are overheated, requiring teachers to open windows even on very cold days.
- ┆ The Media Center/ Library is not air conditioned, despite housing technology equipment and being used year-round.

Examples of electrical issues:

- ┆ Wiring capacity and outlet availability frequently constrain technology usage.
- ┆ Classroom teachers using a projector, computer, Elmo document projector and speakers simultaneously trip the electrical circuit.
- ┆ Students regularly trip over extension cords used to power technology equipment on carts, requiring replacement of damaged equipment.

From the HMFH report:

It is clear that due to its age, the complex requires significant upgrades to (or replacement of) all of the building systems and finishes. This is because either they are obsolete, not in working order, and a drain on energy and maintenance resources, or because they simply do not comply with current code standards for accessibility, plumbing fixture quantities, structural implications, or hazardous material abatement.

Beyond the sizes and configurations of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

- ┆ Acoustic needs: many spaces are acoustically challenged, causing disruptions and making learning difficult; the Music program spaces do not have appropriate acoustic treatment; the rooms adjacent to the Cafeteria are interrupted by noise; the Language Lab needs appropriate acoustics. Old Hall is a loud, echo-filled, challenging space to occupy, coupled with the noises clearly heard from the space below used for band practice and wrestling practice.
- ┆ Auditorium sound and lighting systems: the systems are aged and require replacement.
- ┆ Equipment: throughout the various program spaces much of the equipment used by the teaching staff is outdated or does not exist (fume hoods, appliances, etc.)

- l Air conditioning: the school is used year-round and air conditioning is essential and, at minimum, the Library, Auditorium, and Administrative areas should have air conditioning.
- l Borrowed lights and glazing: part of the confusion of the complex is due to the lack of visual connection between spaces.

In addition to there being too few toilet rooms with too few fixtures for the population, the majority of them are located at the very end of hallways, sometimes beyond the paired hall doors and within the stair well. These are not regularly supervised and pose numerous threats and at the very least, maximize insecurities. We understand that due to the physical, deteriorating conditions as well as the isolated locations of the toilet facilities, that there are students who will not use the facilities throughout the entire school day. This is not a healthy situation.

Priority 5

Question 4: Please describe how addressing the school facility systems you identified in Question 1 above will extend the useful life of the facility that is the subject of this SOI and how it will improve your district's educational program.

The improvements suggested in the On-Site Insight report would replace those elements of the physical plant that are beyond their useful life, and would allow the building to function more appropriately. These improvements will not greatly help the many academic issues in the building, such as outdated science labs, too small and/or poorly configured classrooms, lack of breakout space, etc, as outlined in the Analysis of Programmatic Needs, nor would they address future enrollment pressures.

Please also provide the following:

Have the systems identified above been examined by an engineer or other trained building professional?:
YES

If "YES", please provide the name of the individual and his/her professional affiliation (maximum of 250 characters):

Mr. Robert Labadini is a Building Performance Institute (BPI)-certified energy auditor, and LEED Green Associate accredited.

The date of the inspection: 4/16/2013

A summary of the findings (maximum of 5000 characters):

Please see the attached On-Site Insight Green Capital Needs Assessment and Reserve Replacement Analysis report attached.

Priority 7

Question 1: Please provide a detailed description of the programs not currently available due to facility constraints, the state or local requirement for such programs, and the facility limitations precluding the programs from being offered.

With the advent of the Common Core State Standards and PARCC assessments, access to the benefits of a modern facility become more urgently needed. The limitations of the facility limit the range of experiments in Science classes, access students have to develop their skills in Art, Instrumental Music and Consumer Science and collaboration by students and teachers. Small group work is virtually impossible in an undersized or misshaped classroom. Vitally important is access to modern technology, both for testing and for college and career readiness. The current high school's physical limitations make the roll-out of better technology challenging.

As mentioned in the 'Programs and Operations' section, nearly 100 years of expansion, additions, and re-configurations have resulted in re-purposed and retrofitted classrooms that are forced to fit into a space that is incompatible with today's teaching methods.

Following are some of the programmatic constraints of the facility:

- 1 The Media Center/Library has been divided to accommodate academic support rooms, a music classroom and special education classrooms.
- 1 Many classrooms contain pillars that not only obstruct student and teacher views, but also severely limit accessibility and usable space in the classroom.
- 1 Under-sized classrooms prevent small group collaboration, forcing students to meet in small groups in hallways and stairwells.
- 1 The facility impedes technology implementation, particularly WIFI and ceiling mounted projectors.
- 1 Inadequate wiring and insufficient electrical outlets in classrooms result in frequently tripped circuit breakers.
- 1 Inadequately sized science labs do not provide enough lab workstations for all students to perform experiments safely at the same time.
- 1 Two basement rooms (old Auto Shop and a classroom) are closed due to environmental concerns (PCE). One of these rooms provides the only access to the courtyard garden, thus limiting environmental studies offerings.
- 1 Arlington's state mandated inclusion preschool resides at the high school. The space that it occupies also has limitations, including poor classroom configuration that impedes service delivery and inadequate therapy rooms.

Additionally, from HMFH Analysis of Programmatic Needs report:

Following are the presently known missing and/or inadequate educational spaces:

- 1 Science: additional classrooms and specifically Biology classrooms
- 1 A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space
- 1 Culinary Arts: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- 1 Special Education: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- 1 Music: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- 1 Visual Arts: a dedicated studio arts space
- 1 Physical Education: Health classroom and Dance studio
- 1 School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can

- comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- 1 An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

Priority 7

Question 2: Please describe the measures the district has taken or is planning to take in the immediate future to mitigate the problem(s) described above.

The District has focused on gathering detailed information from outside evaluators and building users so that it can deeply understand the current state of the building, the particular improvements required and the time frame in which they are needed, as well as the programmatic impacts and limitations of the current high school building. The relevant reports are attached to this SOI and are referred to at length in this document. Key information was gathered during the most recent NEASC accreditation process, which highlighted in particular the detrimental nature of aspects of the facility. Accordingly, HMFH was retained to do a programmatic study. In addition, the District retained On-Site Insight for a Green Capital Needs Assessment and Replacement Reserve Analysis. The District has made all of these reports publicly available on the district website.

The District has created a building committee made up of professional staff, local government representatives, parents and community members. Arlington has strong volunteer participation in local government, allowing a depth of outreach not always easily achieved in other communities. To date, the District has sought input from the Town's Capital Planning Committee, Finance Committee, Permanent Town Building Committee, and Long-Range Planning Committee.

To build awareness about the declining condition of the high school facilities, the District offered in-depth tours of the facility to all members of the School Committee, Board of Selectmen, Capital Planning Committee and Town Finance Committee in December 2013. In March 2014, the District expanded the tours to all residents.

The High School Principal has formed a Faculty Building Committee to help identify and understand the programmatic needs and limitations of the facility, and to start thinking about what improvements the high school can make to take academic performance to the next level.

To address immediate facility cleanliness and minor maintenance issues identified in the NEASC report, the Principal plans to start a Booster Club to raise money for minor improvements (paint) and to solicit help with improving the appearance of portions of the facility (locker rooms, hallways, etc.).

Priority 7

Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.

Aging facility and mechanical systems, combined with a sprawling complex that has been reconfigured and repurposed numerous times, result in many negative impacts on the educational program and the daily lives of students and teachers. As reported by the Principal, "There is not a day when administration does not have to spend time on building related issues."

Instruction and Curriculum

- | Age and construction of facility impedes technology implementation.
- | Classroom obstructions limit the ability of teachers to circulate, and of small groups to collaborate.
- | Wide variances in temperature due to leaky windows and aging boilers are distractions.
- | The complex is large and poses program adjacency and teacher collaboration challenges.
- | Inadequately sized science rooms limit ability to deliver curriculum.
- | The media center/library, auditorium and administrative offices lack air conditioning despite year-round use.
- | Undersized media center/library lacks separate workspaces for small group collaboration.

Building Security and Safety

- | Monitoring access to the school's 50 doorways poses a difficult security challenge.
- | Telephones are not available in all classrooms and the public address system is outdated, posing a safety risk in the event of an emergency.
- | Inadequate electrical supply results in frequent overloading of circuits.

Accessibility

- | The complex has only one (undersized) elevator which is not centrally located.
- | The auditorium (used for public events) does not provide accessible seating.
- | Under-sized classrooms pose accessibility and safety concerns.

From the HMFH Report:

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. In most cases the locations of the various departments are quite removed from one another and therefore it "does not encourage collaboration and support." Additionally, there are minimal spaces that allow for teachers (of similar and dissimilar subjects) to meet and collaborate. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally, the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of

spaces for support services such as guidance and special education.

The school building as configured today, after a century of additions, renovations, and on-the-fly repurposing of spaces, poses a safety and security challenge.

There are greater than 50 exterior doors. This fact alone is a security challenge, but is compounded because none of the doors are tied to a security alarm system, and it is virtually impossible to secure the school building either during or off school hours.

Without classroom telephones, there is “no room-to-room communication.” Due to the lack of a fully integrated public address system, the ability to communicate an emergency situation to the entire school is poor. Similarly, and as it was designed, there are three separate fire alarm systems for the three “separate” buildings, but this means whole areas of the building would not be aware of an emergency in another area of the building. The administration has had to develop procedures for communicating and activating multiple alarms in an emergency.

Many classrooms teachers have resorted to the use of power extension cords that, by their nature, are strung across the floors. The result is that teachers do not use technology as readily and tripping is a hazard to students and equipment. The Science classrooms use equipment and chemicals in crowded conditions, many in rooms without proper safety stations. Ultimately, students are denied the learning experience if the conditions are deemed too unsafe. Gas shut-offs for some science labs are located in the adjoining rooms, making this safety measure less effective.

Beyond the sizes, configurations, and quantities of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

REQUIRED FORM OF VOTE TO SUBMIT AN SOI

REQUIRED VOTES

If the SOI is being submitted by a City or Town, a vote in the following form is required from both the City Council/Board of Aldermen **OR** the Board of Selectmen/equivalent governing body **AND** the School Committee.

If the SOI is being submitted by a regional school district, a vote in the following form is required from the Regional School Committee only. FORM OF VOTE Please use the text below to prepare your City's, Town's or District's required vote(s).

FORM OF VOTE

Please use the text below to prepare your City's, Town's or District's required vote(s).

Resolved: Having convened in an open meeting on _____, prior to the closing date, the _____ *[City Council/Board of Aldermen, Board of Selectmen/Equivalent Governing Body/School Committee]* of _____ *[City/Town]*, in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated _____ for the _____ *[Name of School]* located at _____ *[Address]* which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future

_____]; *[Insert a description of the priority(s) checked off on the Statement of Interest Form and a brief description of the deficiency described therein for each priority]*; and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the City/Town/Regional School District to filing an application for funding with the Massachusetts School Building Authority.

CERTIFICATIONS

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

Chief Executive Officer ***School Committee Chair****Superintendent of Schools**

(signature)_____
(signature)_____
(signature)_____
Date_____
Date_____
Date

* Local Chief Executive Officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice. Please do not leave any signature lines blank.



Arlington Public Schools
Business Office
869 Massachusetts Avenue
Arlington, Massachusetts 02476
Telephone 781-316-3511

Diane Fisk Johnson, Chief Financial Officer
djohanson@arlington.k12.ma.us

March 18, 2015

Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Attn: Statement of Interest

Dear Friends:

Attached please find two versions of the Arlington Public Schools 9 Year Enrollment History and Projected Enrollment reports.

These enrollment projections are based on a five year weighted average, which generates a continuity rate from one grade to the next. To calculate the grade one continuity rate, for example, the formula would be:

$$\{((4 \text{ years ago grade one population} / 5 \text{ years ago grade K population}) \times 1) + ((3 \text{ years ago grade one population} / 4 \text{ years ago grade K population}) \times 2) + ((2 \text{ years ago grade one population} / 3 \text{ years ago grade K population}) \times 3) + ((\text{last year's grade one population} / 2 \text{ years ago grade K population}) \times 4) + ((\text{this year's grade one population} / \text{last year's grade K population}) \times 5)\} / 5 = \text{five year continuity rate.}$$

Using this methodology, and birth data from Town Hall, enrollment projections for the future have been calculated. The two sheets differ in one main respect: The sheet projecting through 2020 shows totals for the entire district, while the sheet projecting through 2029 is redesigned to show the impact of existing student populations on the middle and high schools as they age through the system, and does not assume anything about incoming populations of students not yet born. Both sheets have been included to help explain the current enrollment trends for Arlington as a whole and the potential impact of current trends on the future of our secondary building infrastructure.

If you have any questions about these reports, please do not hesitate to contact me.

Sincerely,

Diane Fisk Johnson
Chief Financial Officer

9 Year Enrollment History and Projected Enrollment 2016-2020 -by Grade Levels

<u>Year</u>	Births 5-yrs prev	<u>Pre-K</u>	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>Tot</u>	Incr/(Decr) from Prior yr.	% Change
2006-2007	545	84	442	391	386	394	385	357	356	339	347	302	309	301	323	4716	-18	
2007-2008	537	79	409	439	399	384	381	382	337	354	317	316	271	299	292	4659	-57	-1.2%
2008-2009	496	82	456	405	439	387	376	374	369	344	354	296	308	266	300	4756	97	2.1%
2009-2010	558	64	457	451	411	423	387	366	365	373	343	320	295	323	272	4850	94	2.0%
2010-2011	545	60	450	442	435	399	427	367	349	350	365	306	325	296	311	4882	32	0.7%
2011-2012	537	47	434	455	421	426	390	412	355	335	348	308	304	342	299	4876	-6	-0.1%
2012-2013	496	57	453	472	446	420	429	395	379	337	337	322	313	309	354	5023	147	3.0%
2013-2014	558	60	477	478	483	464	434	429	357	393	328	299	320	321	314	5157	134	2.7%
2014-2015	517	65	516	488	466	483	456	433	401	348	376	319	309	324	342	5326	169	3.3%
5 Year Weighted Average Continuity Rate		1 (PK)	0.906 (K)	1.039 (K-1)	0.985 (1-2)	1.006 (2-3)	1.002 (3-4)	0.994 (4-5)	0.929 (5-6)	0.983 (6-7)	0.977 (7-8)	0.918 (8-9)	1.013 (9-10)	1.021 (10-11)	1.032 (11-12)			
Projected 2015-2016	563	65	510	536	481	469	484	453	402	394	340	345	323	316	334	5453	127	2.4%
2016-2017	545	65	494	530	528	483	470	481	421	396	385	312	350	330	326	5571	118	2.2%
2017-2018	597	65	541	513	522	531	485	467	447	414	387	354	316	357	341	5739	168	3.0%
2018-2019	616	65	558	562	506	525	532	481	434	439	405	355	358	323	368	5912	173	3.0%
2019-2020**	600	65	544	580	554	508	526	529	447	426	429	371	359	366	333	6040	127	2.2%

Data as of 10/17/14

**Birth Numbers from Arlington Town Clerk, estimated for 2019-2020

9 Year Enrollment History and Projected Enrollment 2016-2029 -by Grade Levels

Weighted Average

Year	Births 5-yrs prev	Pre-K	K	1	2	3	4	5	6	7	8	Middle School	9	10	11	12	High School	Incr/(Decr) from Prior yr.	% Change
2006-2007	545	84	442	391	386	394	385	357	356	339	347	1042	302	309	301	323	1235		
2007-2008	537	79	409	439	399	384	381	382	337	354	317	1008	316	271	299	292	1178	-57	-4.6%
2008-2009	496	82	456	405	439	387	376	374	369	344	354	1067	296	308	266	300	1170	-8	-0.7%
2009-2010	558	64	457	451	411	423	387	366	365	373	343	1081	320	295	323	272	1210	40	3.4%
2010-2011	545	60	450	442	435	399	427	367	349	350	365	1064	306	325	296	311	1238	28	2.3%
2011-2012	537	47	434	455	421	426	390	412	355	335	348	1038	308	304	342	299	1253	15	1.2%
2012-2013	496	57	453	472	446	420	429	395	379	337	337	1053	322	313	309	354	1298	45	3.6%
2013-2014	558	60	477	478	483	464	434	429	357	393	328	1078	299	320	321	314	1254	-44	-3.4%
2014-2015	517	65	516	488	466	483	456	433	401	348	376	1125	319	309	324	342	1294	40	3.2%
5 Year Weighted Average Continuity Rate		1 (PK)	0.906 (K)	1.039 (K-1)	0.985 (1-2)	1.006 (2-3)	1.002 (3-4)	0.994 (4-5)	0.929 (5-6)	0.983 (6-7)	0.977 (7-8)		0.918 (8-9)	1.013 (9-10)	1.021 (10-11)	1.032 (11-12)			
Projected	563																		
2015-2016	545	65	510	536	481	469	484	453	402	394	340	1137	345	323	316	334	1318	24	1.9%
2016-2017	597	65	494	530	528	483	470	481	421	396	385	1202	312	350	330	326	1318	-1	-0.1%
2017-2018	616	65	541	513	522	531	485	467	447	414	387	1247	354	316	357	341	1368	50	3.8%
2018-2019	600	65	558	562	506	525	532	481	434	439	405	1278	355	358	323	368	1405	37	2.7%
2019-2020**		65	544	580	554	508	526	529	447	426	429	1303	371	359	366	333	1430	25	1.8%
Proj beyond births 2020-2021		0	0	565	571	557	510	523	492	440	417	1348	394	376	367	378	1515	85	5.9%
2021-2022		0	0	0	557	575	558	506	486	483	430	1399	382	399	384	379	1545	30	2.0%
2022-2023		0	0	0	0	560	576	555	470	478	472	1421	395	387	408	397	1586	41	2.7%
2023-2024		0	0	0	0	0	561	572	515	463	467	1445	434	400	396	421	1650	64	4.0%
2024-2025		0	0	0	0	0	0	557	532	507	452	1490	429	439	408	408	1684	35	2.1%
2025-2026		0	0	0	0	0	0	0	518	523	495	1536	415	434	449	421	1719	35	2.1%
2026-2027		0	0	0	0	0	0	0	0	509	511		455	420	443	463	1781	62	3.6%
2027-2028		0	0	0	0	0	0	0	0	0	498		469	460	429	458	1816	35	2.0%
2028-2029		0	0	0	0	0	0	0	0	0	0		457	475	470	443	1845	29	1.6%

Data as of 10/17/14



Town of Arlington, Massachusetts

Discussion: Future BoS Meetings, July - August

ATTACHMENTS:

Type	Description
 Reference Material	Calendar July, August

July

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
			1	2	3 TOWN HALL CLOSED	4 INDEPENDENCE DAY
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

2015

August

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

2015



Town of Arlington, Massachusetts

Articles for Review

Summary:

Article 14 Disposition of Real Estate/Parcel 13-383 Cliffe Avenue Lexington
Article 15 Home Rule/Board of Assessor Changes (TABLED FROM 2/23/15 MEETING)
Article 18 Endorsement of CDBG Application
Article 45 Resolution/Town Meeting Member Removal Process

ATTACHMENTS:

Type	Description
☐ Reference Material	Warrant Article Text #14, 15, 18 and 45
☐ Reference Material	Town Counsel Memo 2.20.15 re Article #15
☐ Reference Material	Warrant Article #15 Mr. Lorette reference from 2.23.15 meeting
☐ Reference Material	Warrant Article #15 reference from 2.23.15 meeting
☐ Reference Material	Town Counsel Memo 3.26.15 re: Articles #14, #18, and #45
☐ Reference Material	Warrant Article #18 from Planning
☐ Reference Material	#45 Memo
☐ Reference Material	#45 2014 TM Attendance
☐ Reference Material	#45 Vacancies
☐ Backup Material	#45 Town of Framingham Removal Language
☐ Reference Material	10 Registered Voter Letter

ARTICLE 14

**DISPOSITION OF REAL ESTATE/ PARCEL
13-383 CLIFFE AVENUE LEXINGTON**

To see if the Town will vote to authorize the Board of Selectmen to dispose of, or grant access through a 4,025 square foot section of a parcel of undeveloped land identified as 13-383 Cliffe Avenue in Lexington by sale, grant of easement, or otherwise under such terms as the Town may specify consistent with applicable legal requirements; or take any action related thereto.

(Inserted by the Board of Selectmen)

ARTICLE 15

HOME RULE/BOARD OF ASSESSOR CHANGES

To see if the Town will vote to implement the recommendations of the 2012 Massachusetts Department of Revenue "Town and School Finance Analysis" report to make the Director of Assessments an appointment of the Town Manager and to consider changing, or to change, the Board of Assessors from an elected to an appointed board; or take any action related thereto.

(Inserted at the request of Christopher Loreti and ten registered voters)

ARTICLE 18

ENDORSEMENT OF CDBG APPLICATION

To see if the Town will vote to endorse the application for Federal Fiscal Year 2016 prepared by the Town Manager and the Board of Selectmen under the Housing and Community Development Act of 1974 (PL 93-383) as amended; or take any action related thereto.

(Inserted by the Board of Selectmen and at the request of the Town Manager)

ARTICLE 45

**RESOLUTION/TOWN MEETING MEMBER REMOVAL
PROCESS**

To see if the Town will vote to direct the Town Meeting Procedures Committee to investigate and recommend a process for removing Town Meeting Members from their office if they fail to attend a sufficient number of Town Meetings during their term in office; or take any action related thereto.

(Inserted at the Request of the Town Moderator and Town Meeting Procedures Committee)



**Town of Arlington
Legal Department**

Douglas W. Heim
Town Counsel

50 Pleasant Street
Arlington, MA 02476
Phone: 781.316.3150
Fax: 781.316.3159
E-mail: dheim@town.arlington.ma.us
Website: www.arlingtonma.gov

To: Board of Selectmen

Cc: Adam Chapdelaine, Town Manager
John Leone, Town Moderator
Paul Tierney, Director of Assessments
Christine Bongiorno, Director of Health & Human Services
Carol Kowalski, Director of Planning
Stephen Makowka, Chair of the Arlington Historic Districts Commission

From: Douglas W. Heim, Town Counsel

Date: February 20, 2015

Re: Annual Town Meeting Warrant Article # 15

I write to provide the Board a summary of the above-referenced warrant articles to assist in the Board's consideration of these articles at its upcoming hearing on February 23, 2015. For the Board's convenience, attached to the end of this memo are copies of reference materials. Further, the summaries and information regarding Articles, 8, 9 and 10 (registered voter articles) provided herein were previously transmitted to both the Board and their respective citizen proponents on or about February 6, 2014.

ARTICLE 15

HOME RULE/BOARD OF ASSESSORS CHANGES

To see if the Town will vote to implement the recommendations of the 2012 Massachusetts Department of Revenue "Town and School Finance Analysis" report to make the Director of Assessments an appointment of the Town Manager and to consider changing, or to change, the Board of Assessors from an elected to an appointed board; or take any action related thereto.

(Inserted at the request of Christopher Loreti and ten registered voters)

This article was inserted by the citizen petition of Mr. Christopher Loreti. Mr. Loreti has provided background materials in the form of the Department of Revenue's 2012 recommendations referenced in his article itself. In short, Mr. Loreti's seeks to amend the Town Manager Act to convert the Board of Assessors from elected to appointed offices, and to have the Director of Assessments changed to become an appointment of the Town Manager. Such changes may be achieved by appropriate Home Rule legislation approved by the Legislature and a successful subsequent ballot question.¹

As members of the Board may recall, 2011 Town Meeting voted to request the Town Manager research a consolidated Town-School Finance Department and report recommendations to the 2012 Annual Town Meeting. To develop such recommendations, the Manager, this Board, and the School Committee requested the Department of Revenue ("DOR") and the Department of Elementary and Secondary Education analyze Town and School Department financial operations, report on their findings, and provide recommendations.

The resulting 2012 DOR report provided fifteen (15) recommendations, many of which are oriented towards the centralization of town and school financial management duties and

¹ An amendment to the Town Manager Act converting an elected office to an appointed office will certainly require a ballot question. An amendment to the Act making the Director of Assessments a Town Manager appointee may not strictly require a ballot question, but as a practical matter I believe that a single piece of Home Rule legislation with a ballot question would both be more efficient and better received by the State Legislature.

responsibilities under the Town Manager through the creation of a consolidated Municipal Finance Department. Among the comprehensive changes to achieve such centralization were the conversion of several elected offices to appointed offices, specifically the Board of Assessors and the Town Treasurer. Similarly, DOR recommended re-orienting the Director of Assessments to be appointed by the Town Manager rather than the Board of Assessors.

Based in part upon the DOR's recommendations, the creation of a Municipal Finance Department was contemplated by the 2012 Annual Town Meeting Warrant under Article 32, but this Board and the Town Manager agreed that further analysis with appropriate stakeholders was necessary before submitting a specific proposal. Subsequently, Article 22 on the 2013 Annual Town Meeting Warrant requested Home Rule legislation to comprehensively create a coordinated Municipal Finance Department. However, this Board moved for no favorable action at such time.

Mr. Loreti's article seeks to effectuate two of the recommendations of the 2012 DOR report, but should still follow the same Home Rule process as the more comprehensive municipal finance reorganization considered in 2013. As a final matter, it should be noted that the DOR's recommendations highlighted a number of variations on how a Director of Assessments both appointed and supervised, which the Board may find in the 2012 DOR analysis.

Here is my reference material for the hearing on my article. I am sending this report along in case any of the Selectmen have not already read it. Recommendations 3 and 4 on page 23 and Appendix 4 on page 32 provide the basis for my article, so I would appreciate it if you would refer the Selectmen to those pages.

Thank you,

Chris Loreti

3. We recommend that the town make the director of assessing an appointment of the town manager. This change will require additional amendments to the town manager act. If the town chooses to retain an elected board of assessors, however, this arrangement can be awkward. Other towns have addressed this problem by creating a dual reporting relationship where the elected board provides the director with general direction, but the director receives direct, day-to-day supervision from the manager. In other cases, towns have established an appointment process where the assessors screen and check the credentials of potential applicants and recommend one or more choices to the manager.

4. We recommend that the town consider making the board of assessors appointed as well. Today, the role of the board of assessors is largely dictated by state law, computer assisted mass appraisal techniques and the procedural and reporting requirements enforced by the Department of Revenue. Even with regard to abatements and exemptions, the assessors have very little policy discretion. Abatements should be determined based on the relevant facts at hand and, if new information comes to light, new values should be determined using consistent mass appraisal methods to ensure equity when compared to similar properties. Strict statutory eligibility criteria also severely limit any discretion assessors may have in granting property tax exemptions. Only with the hardship exemption under MGL Ch. 59, Section 5, Clause 18, do the assessors have some discretion in determining eligibility. The assessors granted only two of these exemptions in FY2010.

Appendix 4 - Model Finance Department Structures

Needham Charter – Chapter 176 of the Acts of 2004

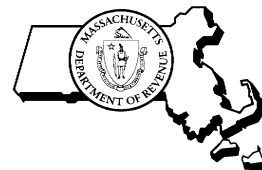
- Town manager appoints the assistant town manager/director of finance subject to the approval of the selectmen.
- Town manager appoints the town accountant, treasurer/tax collector and administrative assessor.
- Removal of assistant town manager/finance director subject to the approval of the selectmen and removal of administrative assessor requires consultation with board of assessors
- Three-member board of assessors are elected
- Representative town meeting of not more than 252 members

Lexington – Selectmen-Town Manager Act, Chapter 753 of the Acts of 1968

- Town manager appoints a treasurer/collector and board of assessors;
- Director of assessing appointed by town manager
- Comptroller appointed by selectmen, after recommendation by town manager, and serves as assistant town manager for finance,
- assistant town manager for finance reports directly to the town manager
- In this capacity, assistant town manager for finance oversees accounting, collections, treasury and assessing.

Brookline – Town Administrator and Finance Director Acts, Chapter 270 of the Acts of 1985, Chapter 25 of the Acts of 1993 and Chapter 29

- Consolidated finance department established in 1993, treasurer/collector position converted from elected to appointed
- Finance director appointed by the selectmen based on the recruitment efforts and recommendation of the town administrator.
- Finance director recommends appointment or removal of treasurer/collector, comptroller and chief assessor to the town administrator; selectmen make these appointments based on town administrator's recommendation.
- The chief assessor serves as chair of the board of assessors and other two assessors are appointed by the selectmen.



Town of Arlington

Town and School Finance Analysis

Division of Local Services / Technical Assistance Section

January 2012



January 26, 2012

Brian F. Sullivan
Town Manager
730 Massachusetts Ave.
Arlington, MA 02476

Dr. Kathleen Bodie
Superintendent of Schools
869 Massachusetts Ave.
Arlington, MA 02476

Dear Mr. Sullivan and Dr. Bodie:

It is with pleasure that I transmit to you the enclosed report, "Town of Arlington, Town and School Finance Analysis" with additional copies for distribution. It is our hope that the information presented in this report will assist the Town of Arlington in its decision-making process with regards to consolidating municipal and school finance/business functions.

As a routine practice, we will post the completed report on-line at the Division of Local Services website within a week or two. Also, we will forward a copy of the report to the town's state senator and representatives.

If you have any questions or comments regarding our findings and recommendations, please feel free to contact Rick Kingsley, Bureau Chief of the DLS Municipal Data Management and Technical Assistance Bureau at (617) 626-2376 or at kingsleyf@dor.state.ma.us.

In closing, we would like to thank you and the other officials in Arlington for your cooperation. I am pleased that the Division of Local Services has had the opportunity to assist the town as part of the Department of Revenue's ongoing commitment to improve financial management in cities and towns across the Commonwealth.

Sincerely,

Robert G. Nunes
Deputy Commissioner and
Director of Municipal Affairs

RGN:mjo
Enclosure

cc: Senator Kenneth J. Donnelly
Representative Sean Garballey
Representative Jay R. Kaufman

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Introduction

At the request of the Arlington Board of Selectmen and School Committee, the Department of Revenue's Division of Local Services (DLS) and the Massachusetts Department of Elementary and Secondary Education (DESE) have completed this analysis on the possible consolidation of municipal and school financial management operations. As part of this analysis, the selectmen and school committee asked us to explore the potential benefits of consolidating or restructuring some or all of these functions.

We have based our findings and recommendations on site visits and telephone conversations by staff members of the Division's Municipal Data Management & Technical Assistance Bureau (MDM/TAB) and DESE's School Business Services unit. The staff interviewed members of the board of selectmen, school committee and finance committee, as well as the town manager and school superintendent, deputy town manager, comptroller, treasurer/collector, director of assessing, school chief financial officer, payroll director, town-school information technology director, purchasing agent and other municipal finance and school business office staff.

DLS staff examined documents such as the annual budgets, tax rate recapitulation sheets, balance sheets and audits. We reviewed the town's organizational structure as set out in the Arlington Town Manager Act, subsequent other special acts and the town's bylaws. The town also provided us with warrants, employee contracts, job descriptions, revenue and expenditure reports, the Powers and Sullivan report on the FY2010 school deficit, the Massachusetts Association of School Business Officials (MASBO) review of the school department's financial operations and other assorted financial documents.

The purpose of this assessment is to assist Arlington officials as they evaluate the town and school financial organizations and consider the prospect of merging these functions or otherwise restructuring them. In reviewing the existing operations, we have focused on: (1) documenting existing organizational structures and workflows; (2) examining potential options and opportunities for achieving operational efficiencies or process improvements; and (3) assessing the benefits or efficiencies associated with consolidation or re-structuring of the town and school finance operation.

We encourage the selectmen and school committee, when evaluating whether to restructure, or possibly merge, these finance operations, to consider the observations, analyses, and recommendations contained in this report.

Overview

Originally settled over 350 years ago as the village of Menotomy, Arlington today has a population of 42,844 spread over 5.18 square miles, making it the twelfth most densely populated municipality in the state. Tight-knit neighborhoods in close proximity to Boston, a diverse housing stock and easy access to highway and mass transit routes make Arlington a highly desirable community. Well-educated and technology savvy residents are passionate about the town, interested in how scarce revenues are allocated among services and hold high expectations for the performance of government. They are active in community affairs and participation is strong on the town's numerous boards and committees as well as at local elections.

Arlington was among the first communities in the state to establish a strong town manager's position and is widely recognized for being at the forefront of the ongoing trend in Massachusetts toward professional management. The "Town Manager Act," approved by the state legislature in 1952, calls for the selectmen to appoint a manager. The town manager is empowered to supervise and direct the administration of most town departments, including police, fire and public works. For the most part, this has provided a sound management structure to ensure the efficient and effective delivery of general government services. However, neither the town manager, nor any other board or committee, has the authority to oversee and coordinate financial management.

Spending has been relatively modest in Arlington. Even when health insurance costs from the trust fund are included, general fund spending per capita rises only to \$2,520 or about 94 percent of the state-wide average spending of \$2,681. Though the town has a single tax rate for all property classes, the tax burden is borne predominantly by the residential property class. Residential property constitutes close to 94 percent of the total tax base and includes a mix of single-family, multi-family, condominium and apartment properties. Single-family tax bills in FY2011 averaged \$5,949, or 31 percent above the state average (\$4,537). The town's average per capita income based on 2008 state tax returns is \$43,637 or more than 30 percent above the state average and property wealth as measured by 2010 equalized property values per capita is \$177,084 or almost 14 percent above the state average.

The town's school system is noted for high academic achievement in both elementary and secondary grades, with Arlington High School recognized by both Boston Magazine and US News and World Report as a top performing high school based on student achievement and college readiness. Good schools and relatively affordable housing options have made Arlington an attractive community for young families with school-aged children. Contrary to the overall trend in state enrollment which declined 2.8 percent between FY2003 and FY2012, the town's foundation enrollment grew by 543 pupils or 13 percent during this period.

For many years, the town's fiscal situation has been strained due to several factors. First, the town's tax levy, which currently provides more than two-thirds of the town's total revenue, grows at a rate that is considerably slower than other communities in the state. As a built out community, the town has very little available space for new construction and must rely on additions/alteration to existing properties to generate "new growth." New growth refers to the increase in the annual levy limit beyond the baseline 2.5 percent increase allowed under Proposition 2 ½. New growth as a percent of the prior year's tax levy has been among the lowest in the state, averaging less than 1 percent since FY2000, compared to the state-wide average of 2.28 percent over this time period.

Arlington also has lost almost \$4 million in general government (non-school) local aid since FY2000, or \$93 per capita. Only 10 other municipalities statewide had deeper general government aid cuts on a per capita basis over this time period. These cuts were implemented as percentage reductions to each community's additional assistance and lottery aid in FY2003 and FY2004 and these accounts were then combined in the FY2010 state budget. Subsequent cuts to the new Unrestricted General Government aid also were done on a percentage basis. Consequently, the communities that received significant amounts of additional assistance, including Arlington, were subject to disproportionate cuts to their general government state aid.

Over the eleven years between FY2000 and FY2011, total town revenues have grown by \$37.5 million, or just under 42 percent. When compared to the 51 percent rate of inflation over this same period, by FY2011, the town had \$8.3 million less revenue than it would have had if revenue growth had simply kept pace with inflation. The cost of employee benefits, and in particular health insurance, has actually exceeded the rate of inflation and further limited spending on direct services. From FY2005 to FY2011, the town's contribution to employee health insurance increased from \$9.6 million to \$16.5 million, a \$6.9 million or 72 percent increase. To address these escalating costs, the town manager successfully negotiated an agreement with the town's labor unions to join the state's Group Insurance Commission.

In this environment of revenue constraints and spending pressures, town officials recognized early on that there were few alternatives but to impose budgetary discipline and emphasize long-term fiscal planning. The "Lyons Plan," named after long-time former selectman Charles Lyons, outlined a multi-year strategy for controlling operating budgets, containing growth in employee health insurance and placing a substantial override before the voters with the promise not to seek another general-purpose override for five years. In June of 2005, the voters of Arlington approved a \$6 million override by a narrow 52 to 48 percent margin. In the initial years, override dollars were appropriated into a special purpose stabilization fund and reserved to fund budgets in the later years of the five-year plan.

Inevitable with a plan like this is the funding cliff that occurs when the override stabilization funds are exhausted and additional overrides become needed to sustain services. The town faced just this situation when planning for FY2012. The available free cash at the time was at a ten-year low point

(\$770,498 compared to the ten-year average of \$3.3 million) due, in part, to a \$1.5 million appropriation deficit in the school department in FY2010. The town's unions had yet to agree to move to the state's Group Insurance Commission (GIC) and substantial investment losses in the override stabilization fund, primarily during FY2009, were cause for concern. Notwithstanding these questions regarding the town's financial management, Arlington voters approved another \$6.49 million override for FY2012.

In spite of the revenue constraints and the structural imbalance inherent in the town's multi-year budget plan, Arlington has earned a AAA bond rating from Standard and Poor's (S&P's). The agency's highest rating indicates an extremely strong capacity to meet debt obligations based on the town's proximity to the Boston area's deep and diverse economy, strong income and property wealth indicators, and a relatively low debt burden. However, S&P rated the town's financial management as "good" rather than "strong," indicating that financial practices exist in most areas, but they may not be formalized or regularly monitored.

In our assessment of the town's financial management, we were impressed that engaged and experienced finance and capital planning committees, working with the town manager and selectmen, have put together strong multi-year financial and capital plans. Issues persist in other areas though. In the FY2010 audit, Powers and Sullivan cited the recent deficit in the school budget as a "material weakness" in controls where a possible misstatement to financial statements would not be prevented, detected or corrected. A subsequent FY2011 debt service deficit (\$239,083) and prior investment losses raised additional questions as to the adequacy of the town's procedures for monitoring fiscal performance, detecting problems and taking prompt corrective action.

A government structure where town finance officers operate independently does not foster an environment conducive to strong financial management. Lack of accountability to a full-time manager leads to fragmented fiscal operations, works against the implementation of regular, formal practices and inhibits an overall team approach to finance. Since many financial management operations cut across departments, they are most effective when managed in a centralized, coordinated structure.

Through informal means, the manager and deputy manager have attempted to play a coordinating role with town finance departments, but the reality is that cooperation is voluntary and none of these officials can be held truly accountable by the manager. Although cooperation among finance officers has historically been fairly good, we firmly believe that accountability is essential to any successful team. So if Arlington wants to raise its financial management to the "strong" level, the obvious question that the town must address is: who is in charge of financial management in general and, in particular, who is responsible for insuring that consistent, effective control and monitoring practices are in place across departments? The short answer now is that there is no one officer or board vested with the formal authority to fulfill this responsibility.

Conclusion

Many other Massachusetts communities have moved to a government structure that places financial management responsibility firmly with the town manager or administrator. Arlington has resisted the clear trend among Massachusetts communities, and particularly among comparably-sized communities with AAA bond ratings (see Appendix 1), to create a consolidated finance department with financial positions accountable to an administrator or finance director. Loyalty to and respect for long-serving officials in these offices may color local opinion, but in the harsh environment of revenue constraints and constant spending pressure, we believe that a coordinated and accountable financial management structure is long overdue in Arlington.

Opportunities exist, as well, to create a more effective and efficient operation with a merger of the school and town finance offices. It is our strong recommendation, however, that before the town considers this consolidation, it should restructure the town financial offices to create a consolidated department accountable to the town manager. At the same time, the town and school department, through the manager and school superintendent, should work together to resolve some of the outstanding issues with previous service mergers such as information technology, payroll and facilities. Sincere efforts to resolve these issues through regular, open channels of communication are important to repairing strained relationships and earning the level of trust and goodwill required for a successful merger.

In the body of the report that follows, we discuss the town's current organizational structure as it relates to financial management, as this structure impacts whether a consolidated municipal and school finance operation is feasible or not. We then document purchasing and payroll procedures and the roles and responsibilities of key town finance staff and the school business office staff. Though the town manager has no direct oversight of the town's finance offices, we also sought to understand the extent of the manager's role in coordinating financial management and drafting an initial budget document. We examined precedents for joint town and school services, as well, as often this track record is the best predictor of the success of future cooperative endeavors. Finally, we reviewed recent issues with town finance and discuss whether a stronger structure may have prevented them.

Who is Responsible for Financial Management in Arlington?

Appointed by the selectmen, the town manager supervises and directs the administration of most town departments, boards and commissions, including the police, fire and public works departments. Notable exceptions to this management authority include the core financial offices of the comptroller, treasurer/collector and assessors. The treasurer/collector is independently elected, the comptroller is appointed by the selectmen and the director of assessing is appointed by the elected board of assessors. Staff in the selectmen's office also is not subject to the manager's oversight. Surprisingly, despite a strong town manager's position that provides direction to and coordinates the efforts of most departments, the key financial management departments operate with no central oversight and, in many respects, are as decentralized as any small town in Massachusetts.

Lacking a cohesive financial structure and formal oversight from the town manager, Arlington has compensated in other ways. Since the town manager's budget authority extended only to those departments under his control, the finance committee has maintained a powerful role in developing a complete, balanced budget. In what is a somewhat disjointed process, budget submissions reside on numerous individual computers and formats vary, requiring extra work of the finance committee. The manager's office must, through informal means, devote a considerable amount of time to developing budget estimates, monitoring the process and otherwise coordinating finance-related activity.

Though the current town manager has made an effort to prepare a comprehensive budget document, including estimates for those departments that do not report to him, this effort has been relatively recent. A home rule amendment, passed by the legislature in December of 2011, empowers the manager to receive all departmental budget requests and prepare a comprehensive and balanced budget for delivery to the selectmen and finance committee. While we believe that this represents a step in the right direction, the town's finance officers will continue to operate independently. Consequently, there is no single officer, board or committee vested with the responsibility to oversee and coordinate financial management.

How are Financial Transactions Handled by the Town Finance Offices?

Comptroller's Office

The comptroller's office has a legal obligation to oversee all financial activity of the municipality. Through the maintenance of independent records and by following well-defined procedures, the office documents the flow of money into and out of municipal accounts, and plays a role in the system of checks and balances established by state statute to monitor and protect local assets. To fulfill this responsibility, the office prepares payroll and vendor warrants to be signed by the comptroller and manager; maintains a general ledger where receipts, expenditures and all other town financial activity are recorded; and, reconciles cash, receivables and debt with the treasurer/collector monthly. In addition, the comptroller tracks revenue and expenditures, and is typically involved in the annual budget process.

Among required submissions to the Department of Revenue, the comptroller is responsible for producing the town's annual Schedule A and year-end balance sheet for free cash certification. Finally, the comptroller works with the board of assessors and town clerk in the preparation of the tax recapitulation sheet. In what is likely a remnant from an earlier era, the office is responsible for the town-wide telephone system and operators as well. Until as recently as 2007, the office also was responsible for information technology.

As stipulated in the Arlington Town Manager Act, the comptroller is appointed by, and may be removed by, the board of selectmen. Office staffing consists of the comptroller, an assistant comptroller, a part-time administrative assistant, a junior accountant and a principal account clerk/bookkeeper. The office is physically located apart from town hall in the basement of Arlington High School.

The MUNIS purchasing system is used by town-side departments to initiate purchase requisitions electronically that are subsequently reviewed by the comptroller's office, forwarded to the purchasing department to ensure compliance with purchasing procedures and then sent back to the comptroller's office to encumber funding and issue the purchase order in the MUNIS system. In contrast, school side purchase orders are initiated using hardcopy forms submitted by the various schools or cost centers to the school business office. There, they are centrally entered by the school business staff, reviewed and signed by the chief financial officer, then approved by the comptroller's office with funding encumbered in the accounting system (See purchasing flow chart in Appendix 2).

There are approximately 500 town-side employees and all are paid weekly with the exception of fire department personnel that are paid bi-weekly. The process is initiated at the department level using the MUNIS payroll system, entries are reviewed by the town's consolidated payroll department that is physically located in the school department and then forwarded to the comptroller's office for review

and sign-off. Accrued employee leave balances are automatically checked and the system flags instances where leave may exceed available balances. The warrant is run, signed by the comptroller and town manager and checks are printed in the IT department (See payroll flow chart in Appendix 3).

With some exceptions, the school payroll is processed bi-weekly and involves upward of 750 checks. Absences are reported manually and hardcopy exception data is sent to each individual school building and cost center. Each school/cost center then prepares payroll sheets on an exception basis and submits them to the payroll office where the information is entered into the MUNIS payroll system. School payroll is signed off by the superintendent and school committee, then forwarded to the comptroller and manager for signatures. Checks are printed by the IT department where the treasurer's signature cartridge is used to electronically sign checks.

Treasurer's receipts are reported to the comptroller on a daily basis. Although these receipts have already been date entered into the treasurer's software, this is a separate program and these receipts must be manually re-keyed into the comptroller's MUNIS general ledger software.

Treasurer/Collector's Office

The treasurer functions as the town's cash manager and has custody of all municipal funds. Included is the responsibility to post and deposit town receipts into appropriate bank accounts, and to monitor balances to ensure that sufficient funds are available to cover obligations. The treasurer invests town funds and manages debt to maximize investment income and to meet cash flow needs. The treasurer maintains a cashbook, debt schedule, check registers and various logs to track balances for trusts, revolving funds and special revenue funds. As a financial control, the treasurer is obligated to reconcile cash balances and debt, both internally, and with the comptroller on a regular basis. The treasurer also maintains tax title accounts and prepares documents to petition for foreclosure.

A collector possesses the authority to receive all payments due including property taxes, excises, betterments and certain other charges. The collector has the responsibility to make certain that collections are properly counted, posted to taxpayer accounts, and turned-over. The collector pursues delinquent accounts and then moves them into tax title accounts. To be successful, the collector must maintain an up-to-date receivable control that is reconciled with the comptroller monthly. They should run credit reports as appropriate and complete necessary research to confirm when refunds are due. In accordance with state law, the collector is required to respond to requests for municipal lien certificates.

The treasurer/collector in Arlington is an elected position, with the incumbent serving since his election in the spring of 2006. The assistant treasurer's position is currently vacant, though the treasurer has created a management analyst's position to bolster the analytical capacity of the office. There are four other staff on the collection side and another four on the treasury side of the office. The

office uses home grown software packages called the Integrated Collection System (ICS) for collections and the Cash Management System (CMS) for recording cash receipts and tracking balances. These systems are not integrated with MUNIS and require duplicative data entry in the comptroller's office.

The office boasts high collection rates for property taxes, motor vehicle excise and water and sewer receipts. Most property tax collections are received from various mortgage escrow services (about 41 percent) and the town's lock box service (about 27 percent) and uploaded to the ICS system. The remaining bills are paid at the counter, put in the drop-box at town hall, paid using the taxpayer's on-line banking services or processed through the town's web-based payment system. The town's web-based system is used by only about 200 customers and a considerable amount of business is conducted at the office counter. The treasurer is working with the IT department to explore improvements such as accepting credit card payments and initiating e-billing.

Historically, these high tax collection rates have been achieved by the prompt issuance of demand notices shortly after the payment due date and the inclusion of a letter with a payment deadline to avoid advertisement for tax taking. About two weeks later, direct phone calls are placed to delinquent payers that have yet to respond. After a notice of taking is advertised in the paper, a second letter is then sent advising the taxpayer of deadlines to avoid the actual filing of a tax lien with the Registry of Deeds.

Assessors' Office

The assessors' office is responsible for valuing all the town's real and personal property, assigning tax payments to owners, and generating the commitments authorizing the collector to collect real estate, personal property and motor vehicle excise payments. To ensure that residents are taxed equitably and accurately, an assessing office maintains and updates property records with information received in response to mailings, from deeds and through the on-site inspection of sale properties and properties where a building permit has been issued. Additional information is gathered during an on-going property measure and list program.

Upon resident application, assessors act on and track exemptions and abatements. They estimate new growth and provide information for the tax classification hearings. The assessors recommend the annual overlay and provide levy information for use in the Tax Recap Sheet submitted to DOR for setting the tax rate. The office is required by DOR to document an annual property value adjustment analysis and to prepare for state certification of property values every three years; FY2010 was the latest recertification year.

A three-member, elected board of assessors is responsible for the office and hires a director of assessing to manage the day-to-day operations of the office. The director of assessing began in

September of 2011, but has substantial previous experience in the field. The office also is staffed by an assistant assessor who conducts property inspections and by two administrative assistants who are relatively new to the office. The office uses the Patriot Properties computer assisted mass appraisal system and relies on the firm for assistance in completing cyclical inspections, assistance with triennial revaluations and review of land schedules, cost tables and commercial property values. The last cyclical inspection was completed in FY2008.

Historically, the annual tax rate setting process has been managed through the assessing office. The comptroller has provided input with respect to appropriations and the use of available funds, while the treasurer has provided estimates for local receipts. The town manager's office has had little direct involvement in this process.

Conclusion

Although the town's finance offices perform their individual functions well in most respects, they operate without direct oversight to ensure coordinated and efficient operations across departments. Staffing levels appeared uneven across departments and we found some procedures were manual or labor intensive. Given the complexity of municipal finance today and the ongoing budgetary pressures facing Arlington, we believe that the current organizational structure with independent finance officers is outdated and no longer sufficient to meet the town's needs. We also believe that this structure has likely contributed to the complexity around the town's budget and the resulting lack of transparency in financial reporting. In the recommendations section of the report that follows, we will present our thoughts on how the town should restructure its financial offices.

How does the School Department Process Financial Transactions?

The school department has its own business office responsible for all administrative and advisory work relative to the business operations of the department. Specifically, the business office oversees the school department's budget development, financial planning, purchasing, budget monitoring and accounting. Responsibility for reporting financial information to the Department of Elementary and Secondary Education (DESE) also rests with this office. Transportation and food services are overseen by other school department administrators and do not fall under the business office.

The school business office is managed by the chief financial officer and includes a budget analyst, procurement officer, accounts payable clerk, and an accounts receivable clerk. An administrative assistant's position was vacant at the time of our field visits, but was in the process of being filled. The chief financial officer is a certified public purchasing officer and is certified as a school business manager by DESE. Her current role is her first as a school business manager. Over the past ten years, there has been much turnover in the chief financial officer's position with five different individuals serving in this capacity.

Since her arrival in September of 2009, the chief financial officer has completed a revision of the district's chart of accounts to make it more compatible with the DESE reporting requirements. We understand that this is the third chart of accounts used by the school department in the last several years. She has revamped the monthly financial reporting system for revenues and expenditures to reflect the new account structure and to include projections to year-end. The chief financial officer also has instituted a position control system where all district positions, regardless of funding source, are listed and assigned a position number with projected salary costs for the year. She has further committed to re-emphasize purchasing controls through the development of a thorough, written manual of purchasing procedures.

The budget analyst is a long-serving member of the school business office who possesses a great deal of institutional knowledge about the Arlington Public Schools. She is responsible for entering state and federal grants into the MUNIS system, setting up the school department approved budget in MUNIS, preparing periodic reports to granting agencies and reviewing budgets during the year. She also has been largely responsible for the preparation of the year-end pupil and financial report to the DESE. A significant amount of her time (as much as three hours a day) is devoted to the process of interviewing potential substitutes, receiving calls every morning from staff reporting absences and calling substitutes to fill-in.

To execute school department purchases, the accounts payable clerk and the procurement officer use the well-documented, written purchasing procedures prepared by the chief financial officer. The purchasing process is initiated at the school building level when principals or their assistants prepare a manual purchase order form. The form documents the desired goods or services and contains fields

for entering estimated costs as well as any expected shipping and handling charges. After the chief financial officer signs off on the purchase order, the procurement officer enters the purchase order into MUNIS and orders the goods or services from the appropriate vendor. The signed receiving copy of the form is sent to the person making the request. Once the goods or services are received, the requestor signs, dates and returns the receiving copy. Receiving documents are compared to the original purchase order and invoices are processed for payment. Vendor invoices are copied by the business office so that the comptroller on the town side receives original invoices and the business office retains a copy as well (See purchasing flow chart in Appendix 2).

All school payroll changes are authorized by the superintendent, and signed-off by the chief financial officer and the human resources officer, before they are entered into MUNIS. The budget analyst prepares manual daily reports on employee absences and sends them to the appropriate school or cost center. Biweekly, payroll sheets are generated and electronically distributed to departments. Each department enters exceptions on the payroll sheet (noting the reason for an absence and if a substitute filled in), the department head signs it and it is returned to the payroll office. The reports are reviewed by the payroll clerk and the exceptions are keyed into MUNIS. Once entered, the payroll clerk runs a detailed report, proves to the prior pay period's base earnings data, and balances the gross wages, deductions and withholdings reports. The payroll is approved by the superintendent and the school committee before it is sent to the comptroller (See payroll flow chart in Appendix 3).

Conclusion

On the school side, improvements to financial controls and reporting have been put into place by the chief financial officer since the deficit in FY2010. However, resources and systems remain somewhat fragile and staff is stretched thin at times. Over time, tight budgets have caused resources to be focused on direct educational services at the expense of administrative capacity across the department. In part, lack of administrative capacity at the building/cost center level is cited as the reason the business office has not moved ahead with MASBO's recommendations to decentralize processing of purchasing and payroll. Recently, communication between the school department and lead finance officials and committees on the town-side has been strained.

Do Previous Collaborative Efforts Point to Future Success?

There are precedents to the town and school working cooperatively to jointly provide services. These relationships are in place in several significant service areas including information technology, payroll, and facilities and maintenance. Other efforts are underway in the area of human resources where the town has provided funding in FY2012 for half of a human resources position in the school department. Previously, the school department has not had access to professional human resources staff. Recently enacted legislation establishes a human resources department that will be made available to the school department provided the school committee agrees to this as required by MGL Ch. 71, Section 37M.

A town meeting vote in 2007 provided the impetus to consolidate the information technology function. The joint technology department is located in the high school and serves both town and school technology needs. The office is directed by a chief technology officer and is staffed by four employees who work primarily on town side technology issues and five employees who work on the school side. The town side employees are unionized while the school technology staff is not. The chief technology officer is a non-union, town employee, but reports jointly to both the school superintendent and town manager. About half of the department budget is appropriated on the town side and the other half is included in the school budget. Equity issues have arisen regarding position classification, salaries and union representation in this recently formed department.

The town and school payroll operations were merged approximately eight years ago. The department is physically located in the high school and the payroll director reports jointly to the school superintendent and treasurer. The entire payroll department budget is funded in the school budget. The payroll director manages the office and is assisted by a staff of 4.5 payroll clerks. Town side departments submit their payroll data electronically through the MUNIS system. Leave balances are maintained in MUNIS so that the system can flag instances where an employee attempts to use leave in excess of the available balance.

On the school side, hardcopy time sheets are sent from payroll to each school or cost center. Once payroll is compiled, it is proofed and a warrant is prepared for signatures. The school committee chair pre-signs blank school payroll warrants, effectively foregoing critical review and sign-off by the committee. Nonetheless, the department has been successful and payroll processing is more cost efficient than it was prior to the merger.

The facilities and maintenance department is included in the school budget and serves both town and school departments. The facilities director reports to the school superintendent and the school department “grey bills” the town for any work provided to town facilities. Employees reportedly belong to the DPW labor union.

Conclusion

Though most town and school officials we interviewed seemed to believe that these collaborative arrangements were working, in some cases additional work remains to address lingering issues. For example, the uniformity of position classifications, salaries and union representation in the information technology department should be addressed. The payroll department and facilities department are budgeted entirely in the school department budget despite the fact that they provide regular services to town departments. This distorts spending for purposes of compliance with state net school spending requirements and results in overstatement of school expenditures to DESE. Moving ahead with a good-faith, constructive effort to resolve these outstanding issues will provide a firmer foundation for a future consolidation of town and school finance operations.

Has the Existing Governmental Structure Impacted Financial Management?

In its 2011 report to town meeting, the finance committee supported a request to the town manager to study the implementation of a consolidated town and school finance department. In recommending favorable action on this article, the committee pointed to the “current fragmentation of financial management functions” and linked the existing structure to unnecessary duplication of effort. The report further describes a budget process that suffers from “obscurity and complexity” and financial reporting that lacks consistency and transparency. In the section that follows, we will describe our observations in reviewing some of the recent fiscal issues that have arisen in Arlington in the context of this structure.

- The town’s budget is difficult to follow and includes numerous “offsets” that effectively reduce appropriations in many different line-items. These offsets typically represent costs that are funded by the town’s enterprise funds. The use of offsets in the budget is not consistent with current enterprise fund budgeting procedures and detracts from a transparent budget document where departments are fully funded.
- The use of these offsets has added unnecessary complexity to the town’s budget, general ledger and financial reporting; and was likely a contributing factor in an error that occurred in the setting of the FY11 tax rate. The comptroller’s staff entered an incorrect offset figure for the skating rink which lowered the debt service appropriation and resulted in an appropriation deficit of \$239,083.
- Departmental budget requests are not prepared using the MUNIS budget module, but reside on various individual computers and are transmitted to the finance committee in different formats. Consistent line-items are not always used, bottom lines sometimes do not match and it is difficult to compare requests to prior year actual spending. Complications arise in tracking budget changes as the deliberation process evolves and assumptions are adjusted.
- A disjointed budget process has likely contributed to financial reporting that is convoluted and difficult for interested officials and citizens to follow. Monthly MUNIS reports sent to department heads are lengthy (135 pages) and, though adequate for an individual department, are not ideal for overall budget monitoring or public distribution. One-page quarterly reports are somewhat useful from this perspective, but are produced less frequently and do not include school spending.
- Tax rate setting, a process that establishes important annual financial benchmarks, is handled almost exclusively by the elected assessors and comptroller, with no meaningful role for the town manager’s office. This creates a situation where the financial policies reflected on the

tax rate recapitulation sheet may not coincide with the town's initial financial plan developed by the manager and finance committee.

- Financial information entered in the treasurer/collector's office must be re-keyed in the comptroller's office due to the lack of integrated software. While bridge programs could be developed to automate the transfer, this has not occurred.
- The treasurer/collector's office invested proceeds from property tax overrides that were set aside in a special purpose stabilization fund in risky investments at State Street Bank. During FY2009, these investments experienced a net loss of about \$500,000 in principal, after the Attorney General's office recovered about \$230,000 from State Street for failing to fully disclose the risky nature of these investments.
- The fact that property tax revenue was the original source of the funds and that these funds would be needed over a short-term time horizon, argues strongly for an investment strategy where there is no tolerance for risk and where the funds are highly liquid and available for use in the upcoming budget year.
- The town manager's office must spend a considerable amount of time attempting to coordinate finances, including school finance issues, through informal means. Nonetheless, the independence of the finance offices has contributed to uneven staffing levels across departments, the use of labor-intensive practices in some areas and has, at times, resulted in inconsistent participation in fiscal planning efforts.
- The FY2010 school department budget deficit of \$1.525 million was set into motion by overly aggressive and flawed revenue estimates, depleted special revenue fund balances and a lack of control over salary expenditures.
- Other practices such as the school department initially charging all costs to the general fund appropriation and making adjustments at year-end made it very difficult for the comptroller to detect school budget problems during the fiscal year. Procedures associated with the long-standing practice of encumbering the entire remaining balance in the school budget at year-end also compromised the town's ability to detect deficits.

In many respects, municipal finance today revolves around the timely, accurate handling of extensive amounts of financial data that travels among finance offices. Assessments, for example, are based on numerous property characteristics and these, in turn, drive assessments and tax bill calculations. The treasurer/collector issues tax bills based on these assessments and receives, deposits and tracks payments. Receipts are turned over to the comptroller to be recorded in the town's financial

statements. Payroll and payables information flows from departments to payroll, purchasing and the comptroller's office.

Given the volume of data involved, it is not realistic to think that mistakes can be eliminated entirely, even in communities with the strongest financial management. The challenge, then, is to develop systems that emphasize a higher level review of transactions so that financial risks are regularly evaluated and significant weaknesses are eliminated.

Over time, we have found that a strong financial team is a proven vehicle to address issues that cut across financial departments. Ideally, the financial team is led by the town manager who is in the best position to set goals and objectives from a town-wide perspective. Accountability to the manager is essential, as well, to ensure that all team members are working toward town-wide goals rather than pursuing individual agendas. Below we list some of the areas where a financial team structure may be beneficial:

- Determine integrated approaches to financial software and data handling that are in the best interests of the town as a whole;
- Create uniform procedures for all town departments regarding the receipt, control, recording and turnover of municipal receipts;
- Ensure that regular reconciliations of cash, receivables, debt and overlay are conducted by finance officers;
- Estimate revenues and fixed costs for budgeting and implement consistent procedures and transparent formats for budget submissions, accounting records and financial reporting;
- Coordinate critical financial operations such as issuing tax bills and setting the tax rate;
- Develop financial strategies, evaluate long-term contractual obligations and prepare cost-benefit analyses for the manager and policy-makers;
- Recommend financial policies in areas such as reserve balances and usage, investments, and debt to the selectmen and finance committee; and
- Assess financial risk regularly to determine areas of weakness, and develop procedures and implement solutions around management letter recommendations of the independent auditor.

Conclusion

The town and school department have since instituted procedures to address many, though not all, of the issues that were root causes of the school deficit and other fiscal issues. While there is no guarantee that the stronger finance structure suggested above would have prevented these issues, we believe that it would have substantially lowered the risk. For example, a broader vetting of the school department revenue assumptions may have revealed the fundamental flaw in using projected "savings" as revenue and prompted early budget revisions to avoid a deficit. Similarly, additional input on

investment strategies may have generated consensus that the town could not afford any risk of principal loss in stabilization accounts funded by property tax override. A team approach to tax rate setting may have detected the keying error that created the debt service deficit as well.

Does the Selection Method for Finance Officers Influence Checks and Balances?

In a good system of checks and balances, procedures must be regularly reviewed to determine whether they continue to be effective, both from the perspective of ensuring that state laws are followed and financial transactions are accurately recorded and reflected in the town's financial statements.

Assessments must be made regarding what constitutes an appropriate level of oversight, control or redundancy for an activity when measured against the level of risk posed by the probability of possible problems in that area.

Proper checks and balances in municipal government arise from strict adherence to general law requirements, careful construction and uniform implementation of internal control procedures and regular independent audits. For example, Massachusetts general laws establish requirements that municipal accounting officers review all potential expenditures. This review is intended to insure that the expenditures are legal, comply with the terms of any contractual or grant agreement, and will not result in an appropriation deficit. Requirements that the accounting officer receive all contracts and grant agreements are designed to support this review.

In other instances, the general laws require that departments receiving cash deliver independent, concurrent turnover reports to both the comptroller and treasurer. When the treasurer later reports all receipts that have been received and deposited in town bank accounts to the comptroller, the comptroller can compare the originating department's turnover to the treasurer's turnover to make sure that funds reported match and have been deposited in the treasurer's bank account. Regular, monthly reconciliations of cash balances between the comptroller and treasurer/collector provide assurance that all reported revenues have been accurately captured in the accounting records. The regular distribution of monthly budget to actual revenue and expenditure reports to departments and policy-makers serves as an additional safeguard.

Internal control procedures encompass all of the above examples, but extend even further to include more specific areas of government fiscal operations. Procedures around the preparation and sign-off of employee time sheets, tracking of leave balances and the use and approval of overtime pay are examples of areas where consistent, documented internal control procedures are of benefit.

Thoughtful procedures are important in the receipt of municipal funds as well. There should be uniform control policies for departments receiving payments, particularly if those payments are in the form of cash. The use of cash registers, sequentially numbered permits, licenses or tickets to create an audit trail for non-committed receipts, and minimizing the number of departments that collect

payments are other examples. For property tax receipts, the prompt posting of payments, timely issuance of demand notices (preferably by someone not directly involved with the collection/posting process) and regular procedures to move delinquent accounts into tax title create strong controls around tax collections.

Other safeguards in the general laws afford protection to municipal employees that disclose, or threaten to disclose, an activity, policy or practice of their employer that the employee believes is in violation of the law. The Massachusetts Whistleblowers Act (Chapter 149, Section 185) protects employees from retaliatory action by their employer when employee reasonably believes that a violation of the law has occurred. These concerns can be directed in writing to the employee's supervisor or reported directly to a public body such as the board of selectmen. If the employee is reasonably certain that the supervisor is aware of, or may be party to, the violation of law, then the employee can provide the information or testify directly before the selectmen.

An additional layer of oversight in the system of checks and balances is provided through regular annual audits by an independent, qualified auditor. The auditors render an opinion on whether or not the town's financial statements are fairly presented. To do this, they test various transactions, review accounting entries and examine financial procedures in an effort to ascertain whether the town's financial statements are accurate depictions of the community's true fiscal condition. The management letter issued as part of the audit notes areas where procedures could be improved or risk could be mitigated. Careful review of the management letter findings, together with prompt management response to any deficiencies or problems, serves to enhance a community's system of controls and checks and balances.

Not to be overlooked in a system of good controls is the human element, or employment culture, that exists for those charged with carrying out the control procedures. It is important that communities establish a strong employment culture that emphasizes professionalism, honesty, and integrity. When hiring and promotions are based strictly on merit and emphasis is placed on accountability, ethical behavior and diligence in the conduct of town business, a strong employment culture emerges.

Conclusion

Though some officials we interviewed expressed concern that the appointment of the town's financial officers would compromise the town's system of checks and balances, we believe that the appointment of financial officers can create opportunities to enhance internal controls, rather than compromise them. We believe that with central oversight and management of the finance departments, the town can move forward in terms of standardizing internal control procedures, evaluating risks across all finance related departments and others departments receiving or spending town funds.

Is the School/Town Finance Consolidation Feasible and Cost Effective?

Though the barriers are probably more political than technical, there are relatively few precedents for a school and town finance merger in Massachusetts. One community where a combined finance department has been implemented successfully is Barnstable.

The Barnstable schools have a total enrollment of about 5,400 pupils and a FY2010 general fund budget of approximately \$58 million. In Barnstable, the foundation enrollment (5,381) represents a fairly low 11.9 percent of total population (45,193). By comparison, total enrollments in Arlington are similarly low relative to total population, with FY2012 foundation enrollment (4,713) constituting 11 percent of the town's total population (42,844). Of particular note, foundation enrollment in Barnstable has declined by 21 percent or 1,446 pupils between FY2003 and FY2012 while, in Arlington, the enrollment has increased by 543 pupils or 13 percent over the same period.

The government structure in Barnstable is quite different from the form of government in Arlington. Barnstable has adopted a town manager/town council form of government where the town manager serves as the town's chief executive and administrative officer and a 13-member town council serves as the legislative body. In Arlington, the selectmen act as the executive branch of government, the town manager handles administrative duties and a representative town meeting of 252 member serves as the legislative body.

According to Barnstable's finance director, essential ingredients to a successful consolidation include unequivocal support from elected and administrative town and school officials, mutual trust between municipal and school leadership and a formal agreement to share revenues. Similar to Arlington, Barnstable uses a budget allocation model designed to divide available revenue among fixed costs and departmental budgets.

In Barnstable, the finance director oversees all finance department operations and plays a lead role in budget development and financial analysis. The finance director reports directly to the town manager. The school department has a dedicated person, the assistant finance director, who focuses solely on school finance, prepares the school budget and oversees all school accounting. She is a certified school business manager, but reports to the town's finance director.

Finance department policy is to present all financial information in an open, transparent manner, but to remain strictly neutral in budget or other conflicts that may arise between school and town officials or administrators. Town and school offices are physically located in the same building and the superintendent and town manager meet weekly with the finance director to foster good communication and working relationships.

Another contributing factor to the town's success cited by the finance director was decentralizing the processing of payroll and payables. Rather than have the accounting department key-in payroll and vendor payment information that is originally collected at the department, building or program level, this responsibility was shifted to each department, or building/program with the schools. Entering this data on a decentralized basis forced each department or program to take ownership of their data, freeing up the finance department to perform higher level audit functions rather than data entry.

In Arlington, opportunities exist for the town to save money if it can successfully reorganize town finance departments and then merge the school business office once this occurs. However, we believe that focusing on potential savings alone can distort the real mission at hand which is to improve the town's financial management structure so that there is direct, day-to-day accountability. Through this structure, a meaningful review of staffing and procedures across departments will emerge to make sure that the town is making the best use of available human and technological resources. Priorities can be established for automating procedures and labor-intensive practices can be systematically evaluated for technology-based solutions.

On the school side, automating the reporting of absence and substitute calling so there is an electronic interface with time and attendance will save valuable staff time in the business office and payroll department. Decentralizing the input of purchasing and payroll information into MUNIS also will save time in the business office, but will require the installation of additional terminals and an investment of time to train staff at the school level. With a merged finance office, redundant review of purchase orders, copying of vendor invoices and difficulty around reconciliation of budget and position control information should be minimized.

Conclusion

While precedents exist for merged services in Arlington, it is clear from the Barnstable example that the town should not move ahead without the full support and trust of the school committee. Arlington's current management structure is not well suited to a merged department since finance officials act outside of the manager's purview. Independence in this regard works against an orderly, regular process to raise service concerns or complaints to ensure that school department needs are met. Attention should be focused first on reorganizing the town finance departments while, at the same time, the town manager and superintendent work to resolve some of the outstanding issues with previous service mergers. A move to a consolidated finance department will not be feasible until the town has created a stronger finance structure and the school committee and administrative staff has confidence that there is a proven means to solve outstanding issues and address future concerns.

Recommendations

In the section that follows, we outline our recommendations to move forward with the restructuring of town and school finance operations. As mentioned earlier in the report, the initial thrust of town action should be to centralize financial management responsibilities under the town manager. We strongly believe that government finance is more complex and challenging than ever, and that municipalities like Arlington that have significant revenue constraints, can ill afford to have its finance officers operating autonomously. With the fifth largest population among Massachusetts towns and a total FY2012 budget of more than \$135 million, we find it surprising that Arlington has no formal means to coordinate complex financial operations that cross departments. This is not intended as a criticism of the performance of incumbent finance officials or the town manager, but rather speaks more broadly to the hurdles that the town's structure poses to coordinated and effective management.

1. We recommend that the town pursue an amendment to its "Town Manager Act" to create a consolidated finance department where appointed finance officers report to a finance director or the deputy town manager. Since the deputy town manager has historically played a significant role in town finance, this may be a natural role for this position. In other comparable communities such as Lexington and Needham, the assistant or deputy town managers serve as the finance director. In other communities such as Barnstable or Brookline, there is a separate finance director responsible for directing the consolidated department, but the director reports to the town administrator or manager. In Appendix 4, we summarize the financial structures of three comparable communities with AAA bond ratings (Needham, Lexington and Brookline) that we believe would serve as effective models for Arlington.
2. We recommend that the town convert the elected treasurer/collector's position to a position appointed by the manager. A clear trend has emerged among Massachusetts communities in favor of appointed positions for a number of compelling reasons. Most relate to ensuring that office holders possess the experience and qualifications for the position and to expanding the pool of potential candidates for the job. Often mentioned is the prevailing theory of government practice that policy makers should be elected, but operational positions, where a certain skill set is required, such as the accountant, assessor, collector and treasurer, etc., should be appointed. Some municipalities see value in placing all town hall positions on equal footing and subject to the same review structure.

Given the size and complexity of the town's budget, there is added value to delineating clear lines of authority and accountability around critical financial management functions. While Arlington is fortunate to have able department heads that care about the town and doing a good job, there is no guarantee that similarly qualified individuals will step forward when the incumbent resigns or chooses not to pursue reelection. To ease the transition to an appointed treasurer/collector, the

town could insert language in the special act to the effect that the incumbent treasurer will be appointed to the position for the first three-year term.

3. We recommend that the town make the director of assessing an appointment of the town manager. This change will require additional amendments to the town manager act. If the town chooses to retain an elected board of assessors, however, this arrangement can be awkward. Other towns have addressed this problem by creating a dual reporting relationship where the elected board provides the director with general direction, but the director receives direct, day-to-day supervision from the manager. In other cases, towns have established an appointment process where the assessors screen and check the credentials of potential applicants and recommend one or more choices to the manager.
4. We recommend that the town consider making the board of assessors appointed as well. Today, the role of the board of assessors is largely dictated by state law, computer assisted mass appraisal techniques and the procedural and reporting requirements enforced by the Department of Revenue. Even with regard to abatements and exemptions, the assessors have very little policy discretion. Abatements should be determined based on the relevant facts at hand and, if new information comes to light, new values should be determined using consistent mass appraisal methods to ensure equity when compared to similar properties. Strict statutory eligibility criteria also severely limit any discretion assessors may have in granting property tax exemptions. Only with the hardship exemption under MGL Ch. 59, Section 5, Clause 18, do the assessors have some discretion in determining eligibility. The assessors granted only two of these exemptions in FY2010.
5. We recommend that the comptroller be included in the consolidated finance department, but in order to preserve some independence for this critical position, that the position remain subject to appointment and removal by the selectmen. To realize the full benefit of this consolidation, however, it is important that the comptroller report directly to and be evaluated by the finance director or deputy town manager. We further suggest that the town evaluate possible ways to accommodate the comptroller's office in the town hall with the rest of the finance offices. Responsibility for the telephone system also should be moved to the information technology department.
6. We recommend that the town explore using the MUNIS budget module for departmental budget submissions and as a central database to store and track changes during the budget process. The current process involves numerous different spreadsheets stored on various personal computers that are often formatted or constructed differently making it difficult to manage the budget as assumptions change. A central database should mitigate these issues and allows for the approved budget to be loaded directly into the accounting records.

7. We recommend that the payroll and purchasing functions be included in the consolidated finance department. Although the current consolidated payroll department is performing well and by all accounts has been successful, payroll is a core finance function that belongs organizationally in the finance department. The purchasing department operates under the authority of the town manager's office and works closely with the comptroller's office in overseeing all town and large school purchases. We suggest that when the town drafts special legislation to amend the town manager act, that it consider including these functions in the finance department. Once the department is established and running well, these functions should be moved into the consolidated department.
8. While the town moves forward on the town-side restructuring of the finance offices, the town manager and school superintendent should work to address some of the outstanding issues with previous town-school consolidations. Though the issues are not insurmountable, working cooperatively to solve them will demonstrate the good faith necessary for a successful finance consolidation. Remaining issues include the different job classifications, salaries and union representation in the merged information technology department and the fact that the merged payroll and facilities department budgets are funded entirely in the school budget. The second issue warrants attention as these expenditures may artificially inflate school spending and should not be reported to DESE as net school spending eligible expenditures.

To address the above issues, and to establish a firm foundation for future collaboration, the town manager and school superintendent should commit to meet regularly. Establishing a clear process to air potential grievances or problems and formulate solutions is important to successful collaboration and ensuring that the needs of both parties are met. Success in this regard is important to ensure that the school committee is satisfied with existing shared services and that they are open to moving forward with a finance merger.

9. We recommend that the school department purchase and implement an automated system for recording school staff absences and hiring of substitutes. Currently, the school budget analyst spends as many as three hours per day to complete these tasks using a manual system. We don't believe that these responsibilities represent the best use of time for the second highest paid and longest serving person in the school business office. Many other school districts have moved to automated systems that allow school personnel to report an absence on-line, designate specific substitutes to be called to fill the absence and interface with the time and attendance records.
10. We recommend that the school administration work to improve the administrative capacity at the building or cost center level. Administrative resources available at the individual school building level have dwindled over time after years of tight budgets. Key people we interviewed felt that there was not sufficient administrative capability to implement the decentralized purchasing, payroll and budget monitoring processes recommended in the MASBO report. We advise that the

school administration initiate a program to enhance this capability through additional training, and perhaps even limited hiring, so that the district can move to the same decentralized processes used by town departments.

As a first step, the information technology department should install MUNIS terminals in each school building or cost center. Training on the use of requisite MUNIS modules should follow so that administrative staff can become familiar with how to initiate electronic purchase orders, input payroll data and monitor budgets in real time. Implementation need not be simultaneous, but can begin slowly by bringing on schools or cost centers where administrative staff has demonstrated the necessary proficiency. Others can be brought on later after additional training is provided.

11. We recommend that the town wait until the town finance departments reorganize and issues with other shared services are resolved before the town proceeds with the merger of school and town finance functions. As stated earlier, it is important that the town has a clear process and open channels of communication to raise and address any problems as they occur. We think that this is also an essential element to building good will and fostering the trust that is necessary for the school committee to agree to a merged financial operation as required by state law (MGL c.71, §37M).
12. In planning the merged department, we recommend that the superintendent and school committee have access to a dedicated staff member with the required school business manager certification. The school committee and superintendent rely on the chief financial officer or business manager in a number of important ways (see Appendix 5 for business manager responsibilities and licensure requirements) and this confidential, trusted relationship must be preserved in the merger. Barnstable handled this issue by establishing an assistant finance director's position devoted exclusively to school finance issues. We have included a proposed organizational chart that reflects these recommended changes on page 28.
13. We recommend that once the merged finance department is running smoothly that it conduct a complete review of the town's budget format, chart of accounts and financial reporting. Over time, the town's budget and, in turn, the underlying accounting and financial reporting, has become overly complex and difficult for interested officials and citizens to follow. We suggest a complete review of the level of detail that is necessary and appropriate for management purposes, as well as what is required for reporting to the state.
14. We recommend that the town and school work to develop a written agreement concerning the allocation of municipal costs eligible to be included as "net school spending." Development of this agreement can be a topic of discussion in meetings between the superintendent and manager.

15. We recommend that the school committee chair review and sign the school payroll warrant only after it has been completed and gross salary information by employee is available for review.

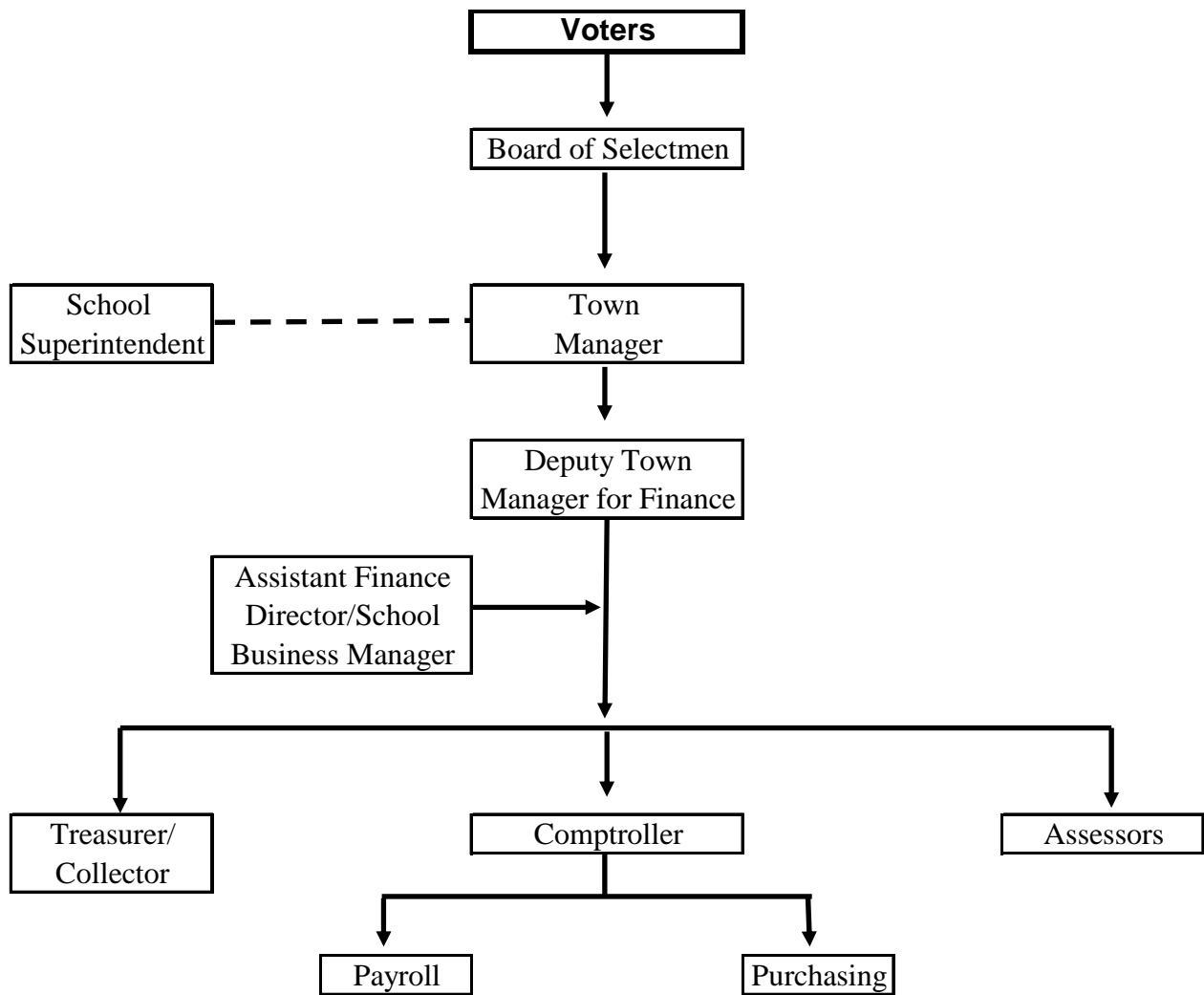
Though some may argue that the school committee review is superfluous after the superintendent has signed off on the payroll warrant, we believe that school committee review and sign-off on salary payments is an important, and legally required, financial control.

We suggest and summarize an implementation timeline on the next page. We assume in this timeline that the town manager and town counsel will draft proposed special act language to submit to the 2012 annual town meeting.

Proposed Implementation Timeline

Timeline	Recommended Action
Annual Town Meeting, Spring 2012	<ul style="list-style-type: none"> • Vote to submit special legislation to amend the “Arlington Town Manager Act” and establish a consolidated town finance department • Assuming favorable action, legislation is filed
July 1, 2012	<ul style="list-style-type: none"> • School department moves ahead with automated system to record/track absences, hire substitutes, and interface with payroll • School department moves forward to install MUNIS terminals, incrementally decentralize processing of payables and payroll, and train/hire administrative staff as necessary • Manager and superintendent meet regularly to address outstanding issues with previous merged services
Annual Town Election, Spring 2013	<ul style="list-style-type: none"> • Assuming prompt legislative approval of special act amendments, the legislation is presented to the voters for approval at the annual town election in the Spring of 2013
July 1, 2013	<ul style="list-style-type: none"> • Implement recommended changes to town finance departments • Fold payroll and purchasing into finance department on January 1st 2014, or later if necessary
July 1, 2014	<ul style="list-style-type: none"> • Merge school finance operation with consolidated town finance department • Work to standardize budget formats, simplify and streamline accounting records and create transparent financial reports

Organizational Chart After Proposed Changes



Appendix 1

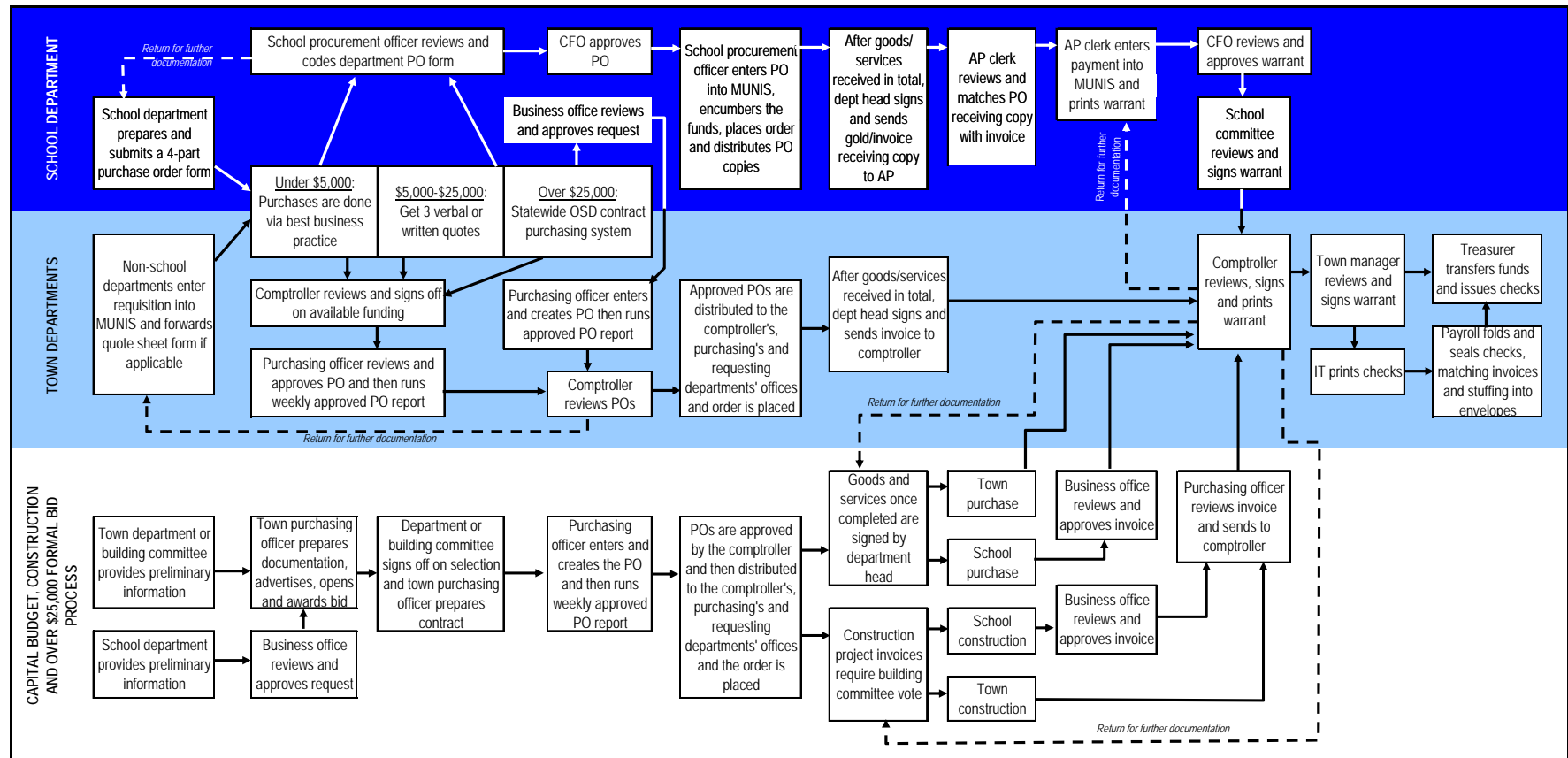
Comparable Communities with AAA Bond Ratings (Populations between 20,000 and 80,000)

Municipality	2010 Population US Census	2008 DOR Income per capita	Population Density: per Square Mile	FY2010 Foundation Enrollment as percent of total Population	Total FY2010 General Fund Expenditures per Capita	Consolidated Town Finance Dept.	Residential Tax Levy per Capita as % Income per Capita	FY2011 State aid as Percent of Budget
WINCHESTER	21,374	81,121	3,539	18.35%	3,495.32	No	3.52%	8.36%
CANTON	21,561	45,677	1,139	13.97%	2,635.58	Yes	3.57%	7.63%
ACTON	21,924	55,111	1,098	10.86%	3,498.90	Yes	4.75%	8.80%
HINGHAM	22,157	70,314	986	17.15%	3,160.84	No	3.44%	10.90%
BELMONT	24,729	65,349	5,307	15.59%	2,816.68	No	3.93%	8.25%
WELLESLEY	27,982	138,406	2,749	17.58%	3,860.92	Yes	2.29%	6.73%
NEEDHAM	28,886	76,319	2,291	17.09%	3,514.37	Yes	3.26%	6.74%
LEXINGTON	31,394	77,120	1,914	19.42%	3,757.85	Yes	4.14%	4.60%
NATICK	33,006	46,870	2,189	14.66%	3,010.38	No	3.94%	9.81%
BARNSTABLE	45,193	29,104	753	12.35%	2,496.25	Yes	6.35%	8.36%
BROOKLINE	58,732	57,700	8,650	10.53%	3,241.71	Yes	3.92%	6.14%
ARLINGTON	42,844	43,637	8,271	10.67%	2,232.27	No	4.32%	12.67%
State Average	18,654	33,411	835	14.37%	2,681.49		4.04%	21.14%

Note: Includes communities rated either Aaa by Moody's or AAA by Standard and Poor's rating agencies

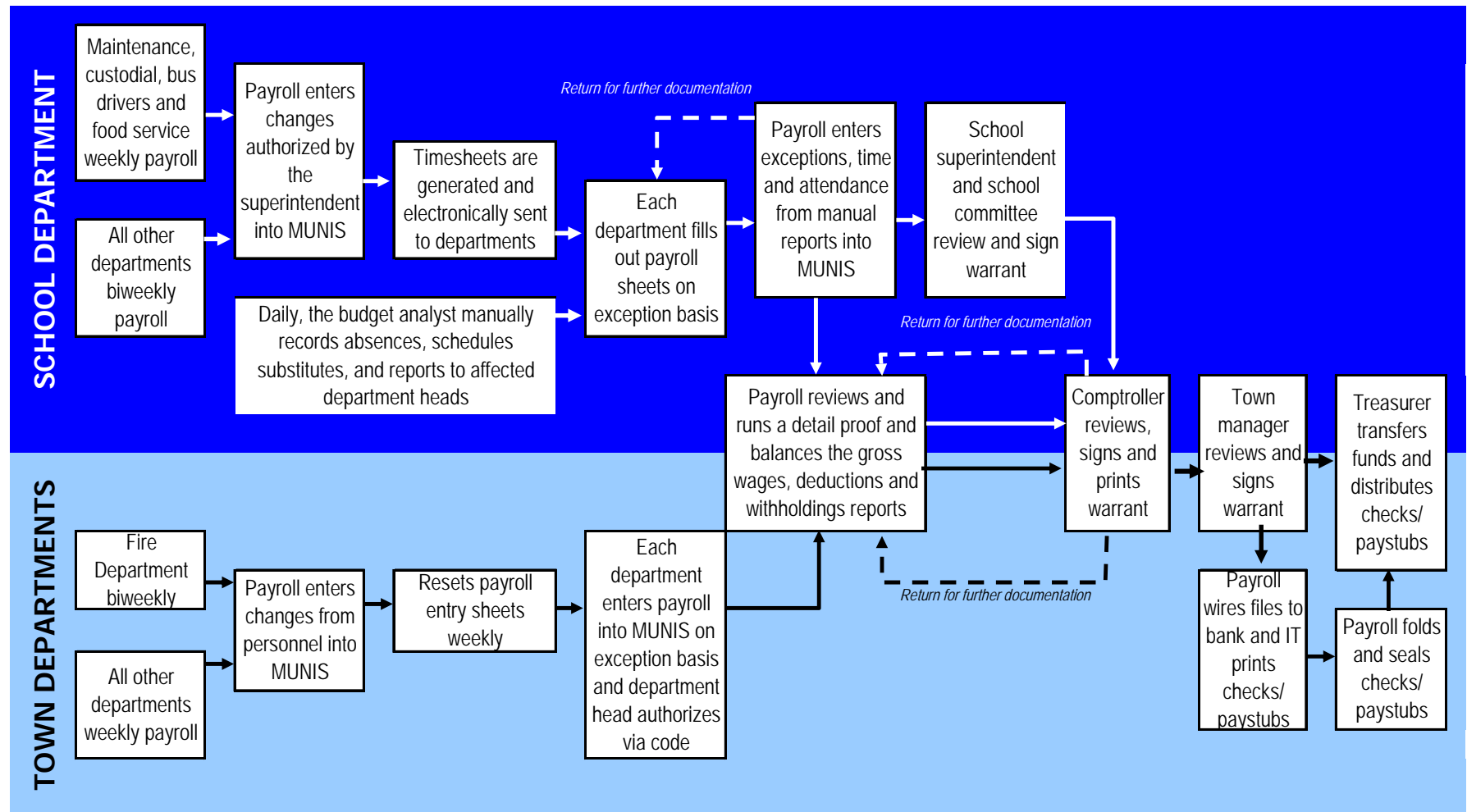
Appendix 2

Town and School Purchasing and Accounts Payable Procedures



Appendix 3

Town and School Payroll Procedures



Appendix 4 - Model Finance Department Structures

Needham Charter – Chapter 176 of the Acts of 2004

- Town manager appoints the assistant town manager/director of finance subject to the approval of the selectmen.
- Town manager appoints the town accountant, treasurer/tax collector and administrative assessor.
- Removal of assistant town manager/finance director subject to the approval of the selectmen and removal of administrative assessor requires consultation with board of assessors
- Three-member board of assessors are elected
- Representative town meeting of not more than 252 members

Lexington – Selectmen-Town Manager Act, Chapter 753 of the Acts of 1968

- Town manager appoints a treasurer/collector and board of assessors;
- Director of assessing appointed by town manager
- Comptroller appointed by selectmen, after recommendation by town manager, and serves as assistant town manager for finance,
- assistant town manager for finance reports directly to the town manager
- In this capacity, assistant town manager for finance oversees accounting, collections, treasury and assessing.

Brookline – Town Administrator and Finance Director Acts, Chapter 270 of the Acts of 1985, Chapter 25 of the Acts of 1993 and Chapter 29

- Consolidated finance department established in 1993, treasurer/collector position converted from elected to appointed
- Finance director appointed by the selectmen based on the recruitment efforts and recommendation of the town administrator.
- Finance director recommends appointment or removal of treasurer/collector, comptroller and chief assessor to the town administrator; selectmen make these appointments based on town administrator's recommendation.
- The chief assessor serves as chair of the board of assessors and other two assessors are appointed by the selectmen.

Appendix 5 - Responsibilities and Licensure Requirements for School Business Managers

Among the most important responsibilities of the school business manager is to develop the school department budget, and take a leadership role to communicate the associated budget plans and impacts to the school committee, town officials and citizens. Often this involves presenting the budget during public hearings and advocating for the budget on behalf of the school superintendent and committee. The business manager also serves in a confidential and advisory role to the superintendent and school committee by preparing financial plans, analysis and recommendations to assist them with important policy decisions such as collective bargaining positions, the setting of user fees and the preparation of the annual budget.

Another primary responsibility of the business manager is to work with principals and program administrators to plan and design financial and accounting controls. Oversight of the day-to-day accounting related to the approximately \$48 million spent by the school department is essential to ensure that financial results are stated accurately, and that spending is consistent with the approved budget and the requirements of state law. This involves the review of all payroll and vendor payments prior to the warrants being approved by the school committee. The business manager also reviews all purchase orders, bid specifications and contracts. The business manager oversees the preparation of financial reports periodically for the committee and the state, including the End-of-Year Pupil and Financial report submitted to the Department of Elementary and Secondary Education (DESE).

Another issue is the DESE regulations that stipulate the licensure requirements for a certified school business administrator to oversee the district's finances. In a merged finance operation, regardless of who fulfills the school business manager responsibilities, DESE regulations call for the person responsible to be licensed as a school business administrator.

DESE's regulations (603 CMR 7.09) cover the prerequisite background needed to achieve initial certification as a school business administrator. First, a candidate needs to possess at least an initial license in another educational role and to have completed at least three years of employment in a district-wide, school-based or other educational setting. Completion of at least three years of employment in a business management or other setting accepted by the DESE can be substituted for the above school experience. Potential school business administrators also must pass the MTEL Communication and Literacy Skills test.

The regulations also require that the school business administrator possess subject matter knowledge in the areas of financial planning and management, accounting systems, management of state and federal funds for special services (food service, transportation and special education), municipal and school

finance laws and regulations, personnel and collective bargaining, and purchasing and facilities, among others.

Lastly, a candidate must complete an approved post-baccalaureate program including a supervised practicum of 300 hours in the school business administrator role, or 300 hours in an apprenticeship with a trained mentor consistent with DESE guidelines or submit to a panel review where the candidate's portfolio of work is assessed by DESE staff. The requirements for certification are fairly rigorous and are not easily attained without a significant time commitment.

Acknowledgements

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Alan Jones, Finance Committee
Allan Tosti, Finance Committee
Brian Sullivan, Town Manager
Adam Chapdelaine, Deputy Town Manager
Domenic Lanzillotti, Purchasing Officer
Ruth Lewis, Comptroller
Cynthia Fields, Assistant Comptroller
Debbie Buono, Junior Accountant
Christine Lambrych, Data Processing Assistant
Stephen Gilligan, Treasurer/Collector
Paul Olsen, Management Analyst
Karen Reilly, Cash Manager
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Barbara Perez, Principal Account Clerk
Carol Filosi, Head Cashier

Kirsi Allison-Ampe, School Committee
Cindy Starks, School Committee
Dr. Kathleen Bodie, Superintendent
Diane Johnson, Chief Financial Officer
Janet Collins, Budget Analyst
Neile Emond, Procurement Officer
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Julia McLaughlin, Director of Payroll
Kelly Pigott, Payroll Clerk
Maria Lalicata, Payroll Clerk
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Julie Dunn, Grant Writer/Coordinator
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To: Board of Selectmen

Cc: Adam Chapdelaine, Town Manager
John Leone, Town Moderator
Carol Kowalski, Director of Planning and Community Development

From: Douglas W. Heim, Town Counsel

Date: March 26, 2015

Re: Annual Town Meeting Warrant Articles ## 14, 18, and 45

I write to provide the Board a summary of the above-referenced warrant articles to assist in the Board's consideration of these articles at its upcoming hearing on March 30, 2015.

ARTICLE 14

**DISPOSITION OF REAL ESTATE/ PARCEL
13-383 CLIFFE AVENUE LEXINGTON**

To see if the Town will vote to authorize the Board of Selectmen to dispose of, or grant access through a 4,025 square foot section of a parcel of undeveloped land identified as 13-383 Cliffe Avenue in Lexington by sale, grant of easement, or otherwise under such terms as the Town may specify consistent with applicable legal requirements; or take any action related thereto.

(Inserted by the Board of Selectmen)

As the Board may recall, this article was inserted for the purposes of exploring the potential sale of a small, unusable portion of a larger body of Town property located in Lexington. Further examination of the parcel at issue over the past several months yielded new information that renders a favorable disposition of the parcel impractical at this time. Accordingly, it is recommended that the Board move no action and withdraw the request for authority to dispose of this real estate at this time.

ARTICLE 18

ENDORSEMENT OF CDBG APPLICATION

To see if the Town will vote to endorse the application for Federal Fiscal Year 2016 prepared by the Town Manager and the Board of Selectmen under the Housing and Community Development Act of 1974 (PL 93-383) as amended; or take any action related thereto.

(Inserted by the Board of Selectmen and at the request of the Town Manager)

Article 18 presents the annual standard CDBG article. The Board should receive a proposed vote from the Director of Planning and Community Development along with further details.

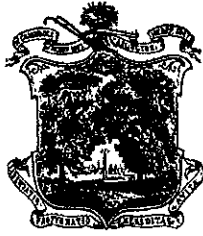
ARTICLE 45

RESOLUTION/TOWN MEETING MEMBER REMOVAL PROCESS

To see if the Town will vote to direct the Town Meeting Procedures Committee to investigate and recommend a process for removing Town Meeting Members from their office if they fail to attend a sufficient number of Town Meetings during their term in office; or take any action related thereto.

**(Inserted at the Request of the Town Moderator and
Town Meeting Procedures Committee)**

This article was inserted at the request of the Town Moderator and the Town Meeting Procedures Committee, and I expect that the Committee or a representative will provide more specific information about this resolution at hearing. However, the overall purpose of this article is self-evident: to gauge Town Meeting's desire to develop a clear and objective process by which Town Meeting members may be removed after failing to attend a to-be-determined number of Town Meeting sessions. Of course, should Town Meeting approve this measure, a process would still have to be developed a voted upon at a future Town Meeting.



TOWN OF ARLINGTON

MASSACHUSETTS 02476

781 - 316 - 3090

DEPARTMENT OF PLANNING and COMMUNITY DEVELOPMENT

MEMO TO: Adam Chapdelaine, Town Manager
Board of Selectmen

FROM: Carol Kowalski, Planning Director

DATE: March 16, 2015

SUBJECT: CDBG Budget-Program Year 41 Recommended Budget

Attached is the recommended proposed budget for the Community Development Block Grant program for the coming program year, July 1, 2015-June 30, 2016. The Board of Selectmen subcommittee comprised of Steven Byrne, Dan Dunn and the Town Manager developed the budget with Planning Department staff.

The Town of Arlington received notification from the Department of Housing and Urban Development that our Community Development Block Grant allocation for FY 2015-2016 will be \$1,042,348.

Please let me know if I may answer any questions or provide further information about the funding recommendations.

Thank you.

WARRANT ARTICLE 18 - ANNUAL TOWN MEETING, APRIL 2015
COMMUNITY DEVELOPMENT BLOCK GRANT - PROGRAM YEAR 41 (7/1/15-6/30/16)

	Amount Requested	Compliance with Nat'l Objectives 24 CFR Section 570.200, 570.201	Town Manager Board of Selectmen Proposed Budget
REHABILITATION/HOUSING			
1. Affordable Housing Program	525,000	Benefit low & mod housing	338,536
2. Arlington Home Improvement Loan Program	350,000	Benefit low & mod housing	225,000
Total	\$875,000		\$563,536
PUBLIC SERVICES			
1. Adult Day Health Center Scholarships	10,000	Benefit low & mod. income	4,000
2. AHS Athletic Scholarships	13,000	Benefit low & mod. income	8,000
3. Arlington Youth Consultation Center	25,000	Benefit low & mod. income	10,122
4. Arlington Youth Hockey Scholarships	5,300	Benefit low & mod. income	-
5. Arlington EATS	6,000	Benefit low & mod. income	1,250
6. Boys & Girls Club Scholarships	20,000	Benefit low & mod. income	14,500
7. Code Red-MyDailyCall Program	1,250	Benefit low & mod. income	-
8. Dial-A-Ride Transportation Program	73,999	Benefit low & mod. income	40,000
9. Food Link, Inc	17,500	Benefit low & mod. income	1,250
10. Fifth Grade Science Camp Scholarships	17,160	Benefit low & mod. income	-
11. Jobs, Jobs, Jobs Program	14,000	Benefit low & mod. income	12,000
12. Ican Shine Learn to Bike Program	2,000	Benefit low & mod. income	1,200
13. Lifeline Subsidy Program	1,200	Benefit low & mod. income	-
14. Menotomy Manor Homework Support Program	6,000	Benefit low & mod. income	6,000
15. Menotomy Manor Outreach Program - Fidelity House	18,000	Benefit low & mod. income	14,000
16. Recreation Program Scholarships	13,000	Benefit low & mod. income	13,000
17. Volunteer Services Coordinator	53,530	Benefit low & mod. income	53,530
Total	\$296,939		\$178,852
PUBLIC FACILITIES AND IMPROVEMENTS			
1. ADA Comp Program-Curb Cuts	150,000	Benefit low & mod. income	125,000
2. ADA Park Improvements	23,170	Benefit low & mod. income	14,000
3. Façade Improvement Program	25,000	Historic Preservation-Spot Blight	-
4. Life & Skills Center Building & Drake Village	250,000	Benefit low & mod. income	200,000
Total	\$448,170		\$339,000
PLANNING			
1. Planning & Zoning Study	75,000	Exempt Activity	50,000
2. Planner	20,000	Program Support Activity	20,000
3. Senior Planner	20,000	Program Support Activity	20,000
4. Vision 2020 (Community Volunteers -Initiatives)	3,000	Exempt Activity	3,000
Total	118,000		\$93,000
ADMINISTRATION			
1. General Administration	20,000	Program Support Activity	12,000
2. Grants Administrator (Salary + Benefits)	86,960	Program Support Activity	86,960
Total	\$106,960		\$98,960
TOTAL ALL REQUESTS	\$1,845,069		\$1,273,348
NOTE: 2015/2016 allocation 1,042,348			
Estimated Program Income: 150,000			
Re-Programmed Funds:			
Public Services -			
Public Facilities 78,100			
Plann & Admn 2,900			
Total Funds Avail: 1,273,348			

Warrant Article 45

As a representative town Meeting, it is important that the elected members actually show up and conduct the town's business. Town Meeting is the Legislative Branch of Arlington's town government. It is made up of 252 elected representatives, twelve from each of the Town's 21 precincts. Town Meeting is the cornerstone of our Town's democratic process, it makes all of the Zoning Bylaws and Town Bylaws and changes to those Bylaws. It controls the purse strings of Town Government by a thorough analysis of the proposed Budgets and Capital Budgets and votes the final approval of those Budgets and their expenditures.

As you may be aware last year Town Meeting initiated the use of electronic voting. One of the many benefits of which, was that attendance of Town Meeting Members was recorded and an attendance report has been generated: <http://arlingtonma.gov/home/showdocument?id=20007>

Article 45 is designed to seek the direction of the Meeting and to instruct the Town Meeting Procedures Committee to investigate and propose a Bylaw for the removal of Town Meeting members who are not attending at least a certain percentage of meeting in any given year. Such as, if one fails to attend at least 25% of the meetings then that person could be removed. (i.e. if you do not make it to at least 3 meeting out of 10, or, 2 out of 5, you would be subject to removal). The specific percentage is also up for debate. Attached is a list of those members who missed 50% or more of the meeting (3 out of 6).

At least two other town have removal provisions Framingham and I believe Reading.

Respectfully, John D. Leone, Town Moderator,
Town Meeting Member Precinct 8,
51 Irving St.

2014 TOWN MEETING ATTENDANCE

Six Sessions

Pr. 1	Nancy Butts Marian E. King Darren W. Lyle William J. Smith Deanna Lynn Healy	Missed all 6 Missed 3 of 6 Missed 4 of 6 Missed 6 of 6 Missed 3 of 6
Pr. 2	John M. Burgess William A. Carey, Jr. Jennifer Watson	Missed 4 of 6 Missed 6 of 6 Missed 5 of 6
Pr. 3	Jean M. Griffin James F. Robillard Richard S. Summers	Missed 4 of 6 Missed 4 of 6 Missed 3 of 6
Pr. 4	Michael R. Costa Patricia A. Costa	Missed 6 of 6 Missed 5 of 6
Pr. 5	Jason M. Donnelly Emily Goodfader Robert W. Miller Nanci L. Ortwein	Missed 3 of 6 Missed 3 of 6 Missed 5 of 6 Missed 3 of 6
Pr. 6	Stephen W. Batzell	Missed 4 of 6
Pr. 9	James J. Garballey Robert E. Herlihy Lyman G. Judd, Jr.	Missed 3 of 6 Missed 6 of 6 Missed 5 of 6
Pr. 13	Joseph E. Currant Paul C. Houser Mark Lombard	Missed 3 of 6 Missed 3 of 6 (Fire Dept) Missed 3 of 6
Pr. 14	Guillermo E. Bahamon	Missed 3 of 6
Pr. 17	Matthew J. Spencer	Missed 6 of 6
Pr. 18	John V. Belskis John Canniff John V. Hurd	Missed 4 of 6 Missed 6 of 6 Missed 3 of 6

Vacancies

A Town Meeting Member may resign by filing a written notice with the Town Clerk which shall take effect on the date filed. A Town Meeting Member who moves from the Town shall cease to be a Town Meeting Member. A Town Meeting Member who moves from the precinct from which he was elected to another precinct, may serve only until the next Annual Town Election.

If any person elected as a Town Meeting Member fails to take his oath of office within thirty (30) days following his notice of election, or fails to attend one-half or more of the total Town Meeting sessions within one year preceding the most recent Annual Town Election, his seat may be declared vacant by a majority vote of Town Meeting.

The Selectmen shall place an Article in the Annual Town Meeting Warrant to remove any such person. The Town Clerk must notify any such person that he may be removed under this section at least seven (7) days in advance of the Annual Town Meeting. Notice shall be mailed to his last known address.

In the event of a tie write-in vote for a vacant Town Meeting position, the position shall be filled by a vote of the remaining members of the precinct from the write-in candidates whose write-in votes were tied. The Town Clerk shall give notice of the tie vote to the remaining Town Meeting members of the precinct. The Town Clerk shall set a time and place for a precinct meeting for the purpose of filling the vacancy.

The Town Clerk shall give notice to precinct Town Meeting members at least 7 days in advance the meeting, and shall also publish notice of the meeting in a newspaper of general circulation in the community. A vacant position filled in this manner shall be filled for the remainder of the term Chapter 57 of the Acts of 2002.

Any vacancy of a Town Meeting position may be filled until the next Annual Town Election by a vote of the remaining members of the precinct. The balance of any unexpired term shall be filled at the next Annual Town Election. The Town Clerk shall give notice of any vacancy to the remaining Town Meeting Members of the precinct.

The Town Clerk shall set a time and place for a precinct meeting for the purpose of temporarily filling any vacancies. The Town Clerk shall give notice of the meeting to precinct Town Meeting Members at least seven (7) days in advance and shall publish legal notice in a community newspaper of general circulation.

At any precinct meeting, a majority shall constitute a quorum. A majority of votes cast at precinct meetings shall be sufficient to fill vacancies, elect a Chairman and a Clerk or conduct any order of business. The Chairman and Precinct Clerk shall certify any election of the precinct and transmit written acceptance of any person elected Town Meeting Member to the Town Clerk.

Town of Framingham

Bylaws can be accessed from www.framinghama.gov ☐ government ☐ bylaws

Article III contains:

1.15 A record available for public inspection shall be kept by the Town Clerk of the attendance of Town Meeting Members at each Town Meeting or adjourned Town Meeting thereafter.

1.15.1 No later than thirty (30) calendar days before nomination papers for Town Meeting representatives are due, the Town Clerk shall post on the Town website the attendance records of all Town Meeting Members for the previous year.

1.15.2 A Town Meeting Member who does not attend at least twenty-five (25) per cent of the Town Meeting sessions for which the person is qualified during the period beginning from the first day of the year, or beginning from the time the person is qualified, and ending on the last day of the year shall be deemed to have abandoned that office as of the last day of such period.

The last item is an extension of Chapter 143 of the Acts of 1949, An Act Establishing in the Town of Framingham Representative Town Government by Limited Town Meetings which includes the following in Section 5-A:

(1) A town meeting member who does not attend at least 1 per cent of the town meeting sessions for which the person is qualified during the period beginning from the first day of the year, or beginning from the time the person is qualified, and ending on the last day of the year shall be deemed to have abandoned that office as of the last day of such period. The per cent indicated above may be changed by by-law of the town.

This act can be accessed from the town website www.framinghama.gov ☐ government ☐ Act of 1949

Let me know if I can provide any more info.

Regards,

Joel Winett, Former Framingham Moderator

OFFICE OF THE BOARD OF SELECTMEN

STEVEN M. BYRNE, CHAIR
JOSEPH A. CURRO, JR., VICE CHAIR
KEVIN F. GREELEY
DIANE M. MAHON
DANIEL J. DUNN



730 MASSACHUSETTS AVENUE
TELEPHONE
781-316-3020
781-316-3029 FAX

TOWN OF ARLINGTON
MASSACHUSETTS 02476-4908

March 24, 2015

Dear Registered Voter:

The Board of Selectmen will meet on Monday, March 30th at 7:15 p.m., Selectmen's Chambers, 2nd Floor, Town Hall, to discuss the Warrant Article petition that you signed. This Warrant Article was tabled at the February 23rd meeting.

Article 15 BOARD OF ASSESSOR CHANGES

Please feel free to contact Mary Ann or Fran in my office at the above number to confirm or if you require any further information.

Thank you.

Very truly yours,
BOARD OF SELECTMEN

A handwritten signature in cursive script that reads "Marie A. Krepelka".

Marie A. Krepelka
Board Administrator

MAK:fr

ARTICLE 15**HOME RULE/BOARD OF ASSESSOR CHANGES**

To see if the Town will vote to implement the recommendations of the 2012 Massachusetts Department of Revenue "Town and School Finance Analysis" report to make the Director of Assessments an appointment of the Town Manager and to consider changing, or to change, the Board of Assessors from an elected to an appointed board; or take any action related thereto.

(Inserted at the request of Christopher Loreti and ten registered voters)

Chris Loreti
Board of Assessor Changes

Christopher Loreti
56 Adams Street
Arlington, MA 02474

John Belskis
196 Wollaston Avenue
Arlington, MA 02476

Elsie Fiore
58 Mott Street
Arlington, MA 02474

David Garbarino
735 Concord Turnpike
Arlington, MA 02476

Jon Gersh
24 Kipling Road
Arlington, MA 02476

Brian Hasbrouck
46 Sherborn Street
Arlington, MA 02474

Peter & Jane Howard
12 Woodland Street
Arlington, MA 02476

Gordon Jamieson
163 Scituate Street
Arlington, MA 02476

Heather Remoff
1 School Street
Arlington, MA 02476

Michael Ruderman
9 Alton Street
Arlington, MA 02474



Town of Arlington, Massachusetts

Articles for Review

Summary:

Article 11 Bylaw Amendment/Establishment of a Community Preservation Committee
Article 12 Revision of Town Committee/Vision 2020 Standing Committee
Article 19 Revolving Funds

ATTACHMENTS:

Type	Description
 Reference Material	Draft Final Votes & Comments for Articles #11, 12, 19



**Town of Arlington
Legal Department**

Douglas W. Heim
Town Counsel

50 Pleasant Street
Arlington, MA 02476
Phone: 781.316.3150
Fax: 781.316.3159
E-mail: dheim@town.arlington.ma.us
Website: www.arlingtonma.gov

MEMORANDUM

TO: Board of Selectmen

FROM: Douglas W. Heim

DATE: March 26, 2015

RE: **Draft Final Votes and Comments for Articles:
11, 12 and 19**

I write to provide the Board the following as draft Final Votes and Comments for your consideration at the March 30, 2015 Board of Selectmen meeting regarding the previously heard, above-referenced warrant articles.

ARTICLE 11

**BYLAW AMENDMENT/ESTABLISHMENT OF A
COMMUNITY PRESERVATION COMMITTEE**

VOTED: That Title II of the Town Bylaws (“Committees and Commissions”) be and hereby is amended by inserting a new article to provide for the creation of an Arlington Community Preservation Committee as follows:

Article 12: Community Preservation Committee

Section 1. Establishment and Membership

- a. **There is hereby established a Community Preservation Committee consisting of at total of nine (9) members pursuant to G.L. c. 44B § 5. The membership shall be composed of one member of the Conservation Commission as designated by such Commission, one member of the Historical Commission as designated by such Commission, one member of the Arlington Redevelopment Board (which serves as the Town's Planning Board) as designated by such Board, one member of the Park and Recreation Commission as designated by such Commission, one member of the Arlington Housing Authority as designated by such authority, and four (4) at-large members appointed by a joint vote of approval by the Board of Selectmen and the Town Manager as follows below in Section 1(b).**
- b. **Candidates for at-large membership shall be jointly gathered and screened by the Town Manager and the Chair of the Board of Selectmen, who shall jointly forward recommended candidates for a vote on appointment by the full Board of Selectmen plus the Town Manager (a maximum total of six votes representing the five Selectmen and the Town Manager). A majority vote the Board of Selectmen and the Town Manager shall be required for appointment to an at-large member position.**
- c. **At-large members shall be appointed to the following initial terms: One (1) for a one-year term, two (2) for two-year terms, and one (1) for a three-year term. All subsequent terms shall be for three years. All other members shall serve a term determined by their designating bodies not to exceed three years. All members, at-large and otherwise, are eligible for reappointment. Should any appointing or designating authority fail to appoint a successor to a CPC member whose term is expiring, such member may continue to serve until the relevant authority names a successor.**
- d. **A vacancy of the Committee shall be filled by the relevant appointing or designating authority.**

Section 2. Duties and Responsibilities

The Community Preservation Committee shall have all the duties and powers as set forth in G.L. c. 44 §5, including, but not limited to the following:

- a. **The Community Preservation Committee shall study the needs, possibilities and resources of the Town regarding community preservation. The Committee shall consult with existing municipal boards, including the Board of Selectmen, Conservation Commission, the Historical Commission, the Redevelopment Board, the Park and Recreation Commission, the Council on**

Aging, the Housing Authority, the Finance Committee, and the Capital Planning Committee. As part of its study, the Committee shall hold one or more public informational hearings on the needs, possibilities, and resources of the Town regarding community preservation possibilities and resources, notice of which shall be posted publicly and published for each of two weeks preceding the hearing in a newspaper of general circulation in the Town.

- b. The Community Preservation Committee shall make recommendations to the Town Meeting for the acquisition, creation, and preservation of open space; for the acquisition, preservation, rehabilitation and restoration of historic resources; for the acquisition, creation, preservation, rehabilitation and restoration of land for recreational use; for the acquisition, creation, preservation, and support of community housing; and for rehabilitation or restoration of such open space and community housing that is acquired or created with CPA funds. With respect to community housing, the Committee shall recommend, wherever possible, the reuse of existing buildings or construction of new buildings on previously developed sites. Recommendations to Town Meeting shall include their anticipated costs.**
- c. The Community Preservation Committee may include in its recommendation to the Town Meeting a recommendation to set aside for later spending funds for specific purposes that are consistent with community preservation but for which sufficient revenues are not then available in the Community Preservation Fund to accomplish that specific purpose, or to set aside for later spending funds for general purposes that are consistent with community preservation.**
- d. Prior to making its final recommendations to Town Meeting for approval, the Committee shall present draft recommendations to the Board of Selectmen, the Finance Committee, and the Capital Planning Committee for comment. Further a designated member of the Board of Selectmen, Finance Committee, and Capital Planning Committee shall be permitted, but not required, to serve as a liaison to the Committee.**

Section 3. Administration and Operation

- a. The Community Preservation Committee shall not meet or conduct business without the presence of a quorum. A majority of the members of the Community Preservation Committee shall constitute a quorum.**
- b. The Community Preservation Committee shall approve its actions by majority vote of the quorum.**
- c. Each fiscal year, the Committee shall recommend to Town Meeting an operational and administrative budget. The timing of such budget**

recommendation shall be coordinated with the Town Manager's annual operating budget submission to the Board of Selectmen.

Section 4. Amendments

The Community Preservation Committee shall, from time to time, review the administration of this by-law, making recommendations, as needed, for changes in the by-law and in administrative practice to improve its operations.

Section 5. Construction and Severability

At all times this by-law shall be interpreted in a manner consistent with G.L. c. 44B, the Community Preservation Act. Should any section, paragraph or part of this chapter be for any reason declared invalid or unconstitutional by any court of last resort, every other section, paragraph, or part shall continue in full force and effect.

Section 6. Effective Date

Following Town Meeting approval of this by-law, this Title shall take effect immediately upon the approval by the Attorney General of the Commonwealth. Each appointing authority shall have forty five (45) calendar days after approval by the Attorney General to make their initial appointments. Should any appointing authority fail to make their appointment within that allotted time, the Town Manager shall make the appointment from the membership of such appointing authority.

(5-0)

COMMENT: Following 2014 Town Meetings' adoption of G.L. c. 44B §§3-7 (the Community Preservation Act or "CPA"), the Town must adopt a bylaw to establish a Community Preservation Committee ("CPC") in order to spend CPA monies on appropriate projects. Once established a CPC is first charged with assessing Arlington's community preservation needs, including consulting with various Town boards, committees, and commissions, and then must recommend specific, CPA-eligible projects for funding to Town Meeting for appropriation each year.

By law, a CPC must consist of at least five (5), but no more than nine (9) members as follows, with five seats reserved Arlington's equivalents to a Conservation Commission, Planning Board, Historical Commission, Housing Authority, and Board of Park Commissioners. Up to four additional members may be appointed or elected by various processes and entities.

Hence, following comparative analysis of other municipalities' CPCs and discussions with stakeholders and experts, the Board of Selectmen strongly recommends the adoption of a nine-member CPC, with at-large members appointed by a joint Board of Selectmen-Town Manager vetting process that affords the Board further involvement than the typical Town appointment

processes. While this Board has tremendous confidence in the Town Manager's ability to identify and put forward candidates, the CPA surcharge dollars at stake merit increased Board involvement in CPC appointments both as a matter of representing the community as elected officials and as a matter of responsibility.

Additional features of the foregoing vote include measures to balance the CPC's autonomy with the need to consult important Town bodies responsible for advocating for residents' interests, budgeting, and long-term planning, including the Finance Committee, the Capital Planning Committee, this Board, and the Council on Aging, among others.

ARTICLE 12

REVISION OF TOWN COMMITTEE/VISION 2020 STANDING COMMITTEE

VOTED: That the 1992 vote of Town Meeting (Article 41) establishing the Vision 2020 Standing Committee is hereby amended by striking the vote in its entirety and replacing it as follows:

A. Vision 2020 Standing Committee Establishment and Purpose

That the Town hereby provides for the appointment of a committee and advisory board to be called the Vision 2020 Standing Committee which shall oversee the progress and implementation of the Vision 2020 recommendations made to the Town and contained in the report given under Article 40 of the 1992 Annual Town Meeting and report on said progress and implementation each year until discharged. This committee will ensure the continuation of the long range planning process of Vision 2020 initiated by the Town in 1990 and shall reevaluate the Town Goals adopted by Town Meeting in 1993 at least every two years. This committee shall also create, implement, monitor, and review methods for open, town-wide public participation in the Vision 2020 process.

B. Standing Committee Membership, Quorum, Administration, & Organization

The Standing Committee shall consist of nine (9) Voting Members including a Chairperson, and a ten (10) person non-voting Advisory Board. Voting members and the Advisory Board shall both be charged with fulfilling the mission of Vision 2020. Only Voting Members shall have authority to make decisions and set policy of the Committee and otherwise bind the committee by a majority vote of a quorum. However, the Advisory Board shall have the right to be recognized at meetings and request topics and issues be placed before the Standing Committee on agendas. A quorum shall consist of a majority of Voting Members (5).

1. Appointment of Voting Members

a. Voting Members shall be comprised of:

- i. Two (2) Town of Arlington residents appointed by the Town Moderator, one of which shall serve an initial two-year term, and the other an initial three-year term, with all subsequent terms for three years;**
- ii. Two (2) Town of Arlington residents appointed by the Superintendent of Schools with approval of the School Committee, one of which shall serve an initial one-year term, and the other an initial two-year term, with all subsequent terms for three years;**
- iii. Two (2) persons appointed by the Town Manager with approval of the Board of Selectmen, one of which shall serve an initial one-year term, and the other an initial two-year term, with all subsequent terms for three years;**
- iv. Two (2) persons appointed by the Director of Planning and Community Development with approval of the Arlington Redevelopment Board (“ARB”), one of which shall serve an initial one-year term, and the other an initial three-year term, with all subsequent terms for three years; and**
- v. One (1) Chairperson, who shall be a resident nominated by a majority vote of the eight (8) above-listed Voting Members following recommendations from the Town Manager and School Committee Members, and approved by the Board of Selectmen. The Chairperson shall serve an initial three-year term, with all subsequent terms for three years.**

b. All Voting Members shall be eligible for reappointment.

c. At all times at least one of the four collective appointments between the Town Manager and the Director of Planning shall be a current Town employee. All Town Manager and Director of Planning appointees who are not Town employees must be Town residents.

d. A vacancy of the Committee shall be filled by the relevant appointing or designating authority.

2. Advisory Board

The Advisory Board will be composed of the following ten (10) total members: the Town Manager, the Superintendent of Schools, the Town Moderator, the Director of Planning and Community Development, Town Counsel, one secondary student residing in the Town of Arlington appointed by the Superintendent and approved by the School Committee on a one-year term, and

the Chairpersons of the Board of Selectmen, the School Committee, the ARB and the Finance Committee or such bodies' designees.

C. Effective Date and Appointments

Following Town Meeting approval of this revised vote, all Voting Member appointments except the appointment of the Chairperson shall be made on or before July 1, 2015, and the Chairperson shall be appointed on or before August 14, 2015. Until the Chairperson is appointed, the Standing Committee may designate a Vice Chair from within its membership to administer the Committee's business. The presently serving Standing Committee shall continue to govern Vision 2020 until July 1, 2015.

COMMENT: The Board urges favorable action on this article as a means of updating the Vision 2020 Standing Committee operations to address the many logistical challenges of a Committee which performs diverse and essential work for the Town as part of Vision 2020, but is presently comprised of 22 members, including the Town Manager, the Superintendent of Schools, the Town Moderator, and the respective chairs of this Board, the School Committee, the Finance Committee, the Redevelopment Board.

Under the revised charter proposed and approved by the Standing Committee, nine (9) voting members who would count towards a quorum will manage the routine, operational duties of the Committee, enabling a larger body including "advisory board members" (including the Town Manager, members of this Board and the School Committee, etc.) to meet less frequently, but focus on matters of strategy in furthering the Town Goals.

ARTICLE 19

REVOLVING FUNDS

VOTED: The Town does hereby reauthorize the following revolving funds.

Private Way Repair established under Article 46 of the 1992 Annual Town Meeting

Expenditures not to exceed \$200,000	
Beginning Balance	\$13,304.91
Receipts	37,553.76
Expenditures	0.00
Balance, 7/1/14	\$50,858.67

Public Way Repair established under Article 45 of the 1992 Annual Town Meeting

Expenditures not to exceed \$5,000	
Beginning Balance	\$ 168.40
Receipts	0.00
Expenditures	0.00
Balance, 7/1/14	\$ 168.40

Fox Library established under Article 49 of the 1996 Annual Town Meeting

Expenditures not to exceed \$20,000

Beginning Balance	\$13,690.55
Receipts	3,550.00
Expenditures	2,172.42
Balance, 7/1/14	\$15,068.13

Robbins House established under Article 77 of the 1997 Annual Town Meeting

Expenditures not to exceed \$75,000

Beginning Balance	\$35,312.80
Receipts	62,097.28
Expenditures	65,516.47
Balance, 7/1/14	\$31,893.61

Conservation Commission established under Article 44 of the 1996 Annual Town Meeting

Expenditures not to exceed \$10,000

Beginning Balance	\$3,312.52
Receipts	0.00
Expenditures	569.98
Balance, 7/1/14	\$2,742.54

Uncle Sam established under Article 31 of the 2000 Annual Town Meeting

Expenditures not to exceed \$2,000

Beginning Balance	\$411.31
Receipts	3,000.00
Expenditures	1,885.00
Balance, 7/1/14	\$1,526.31

Life Support Services established under Article 37 of the 2001 Annual Town Meeting

Expenditures not to exceed \$800,000

Beginning Balance	\$298,371.70
Receipts	629,239.50
Expenditures	521,795.96
Balance, 7/1/14	\$405,815.24

Board of Health Fees established under Article 30 of the 2005 Annual Town Meeting

Expenditures not to exceed \$125,000

Beginning Balance	\$86,284.09
Receipts	76,970.06
Expenditures	97,724.45
Balance, 7/1/14	\$65,529.70

Field User Fees- Established under Article 78 2004 Annual Town Meeting

Expenditures not to exceed \$80,000

Beginning Balance	\$43,400.04
Receipts	42,245.64
Expenditures	21,797.15
Balance, 7/1/14	\$64,848.53

Robbins Library Rental – Established under Article 35 2006 Annual Town Meeting

Expenditures not to exceed \$8,000

Beginning Balance	\$16,750.53
Receipts	9,315.00
Expenditures	4,369.43
Balance, 7/1/14	\$21,696.10

Town Hall Rental – Established under Article 35 2006 Annual Town Meeting

Expenditures not to exceed \$100,000

Beginning Balance	\$22,163.10
Receipts	47,944.62
Expenditures	55,573.18
Balance, 7/1/14	\$14,534.54

White Goods Recycling – Established under Article 35 2006 Annual Town Meeting

Expenditures not to exceed \$80,000

Beginning Balance	\$16,755.21
Receipts	35,031.77
Expenditures	6,677.59
Balance, 7/1/14	\$45,109.39

Library Vend – Established under Article 34 2009 Annual Town Meeting

Expenditures not to exceed \$25,000

Beginning Balance	\$14,315.11
Receipts	9,778.50
Expenditures	19,219.68
Balance, 7/1/14	\$4,873.93

Gibbs School Energy – Established under Article 45 2010 Annual Town Meeting

Expenditures not to exceed \$120,000

Beginning Balance	\$27,730.05
Receipts	97,171.04
Expenditures	88,441.82
Balance, 7/1/14	\$36,459.27

Cemetery Chapel Rental – Established under Article 52 2011 Annual Town Meeting

Expenditures not to exceed \$15,000

Beginning Balance	\$0.00
Receipts	0.00
Expenditures	0.00

Balance, 7/1/14	\$0.00
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Council on Aging Program Revolving Fund – Established under Article 28
2013 Annual Town Meeting
Expenditures not to exceed \$25,000

Beginning Balance	\$0.00
Receipts	0.00
Expenditures	0.00
Balance, 7/1/14	\$0.00

(5-0)

COMMENT: The above represents the usual vote to receive reports on expenditures and receipts of the various Town revolving funds and to authorize and reauthorize such funds in accordance with state law. Additional materials regarding the Revolving Funds have also been included in the Appendix to this report for further consideration.



Town of Arlington, Massachusetts

NEW BUSINESS



Town of Arlington, Massachusetts

EXECUTIVE SESSION



Town of Arlington, Massachusetts

Next Meeting of BoS April 13, 2015